ISSN0310-222X

No 39 — August-October, 1983/$2.50*

EARTH GARDEN

ALTERNATIVE ENERGY

- Using low voltage, small scale energy — run house lights and TV from your car battery, farm energy self-sufficiency, Peter Pedals' incredible bicycle wheel wind generators and pedal power machines.
- Avocado growing guide, backyard food gardens, herbs, rosehips, laying out a farm, protecting trees, the vineyard in spring, dairy notes.
- *The bushfire defensive house*
- Plus: Fire without matches, make a drum cutter, 'next-step' home baked bread, tasty tomato recipes, old-time household hints, recycling containers, access, land lines, your letters, lots more!

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*Recommended and maximum price only

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SALE! SALE! SALE!

We don't have paid advertising, give-aways or even bingo, but *Earth Garden* is having our first ever bargain sale.

The main reason is that our storage shed (an old garage) is bursting at the seams. With five books and 39 issues of our magazine, we have a problem — lack of space.

To make room, we would like to clear out some of our back issues, so we are offering the set of EG1 to EG36 (that's 10 years of *Earth Garden)* for $50.00, posted anywhere in Australia. This is your chance, if you are a new reader, to obtain a wealth of information, packed into 2200 pages, including our two double *Access* issues, EG22-3 and EG25. Or fill in the gaps in your collection. We won't be reprinting when this current stock runs out.

The 36 issues make up a thorough reference to so many topics to help you become self-reliant, to put a roof over your head and food in your stomach, keep small livestock and take advantage of alternative energy sources.

It is a survival kit and resource file that could change your life.

The order form for this special offer is on page 58.

EARTH GARDEN 39

Earth Garden, established in 1972, presents a range of natural lifestyles. It is intended as a key to sources, practical ideas, alternatives and self-sufficiency.

It is concerned with non-polluted living and growing, the back-to-the-earth movement, surviving in the city, the bush, food and diet, and the inner changes which follow when you are in tune with nature.

Let us lead you up the Earth Garden's path to the good life.

We don't have advertisements in Earth Garden. That way we're not influenced by any vested interests. Books, places and products recommended are those we think relevant.

Edited and published by Irene and Keith Vincent Smith.

Illustrations: Elaine Norling

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Distributed to newsagents by Gordon & Gotch Ltd, Sydney.

Printed by Maxwell Printing Co Pty Ltd, 862 Elizabeth Street, Waterloo, NSW, for the publishers, Earth Garden, PO Box 378, Epping, NSW, 2121.

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Why Peter pedals

"That's incredible" gasped the comperes of the television programme of the same name when Peter van der Wyk of Nimbin, NSW, appeared recently demonstrating his pedal powered washing machine, drier, flour mill and electric generator powering a TV set.

Peter Pedals, as he's called, believes that human muscle power should get top rating among alternative energy sources. "It is at least equal to solar power in cheapness, cleanliness and efficiency," he says.

"It doesn't require a very high level of technology in order to power all kinds of appliances such as drills, lathes, generators, pumps, potter's wheel, food mixers, blenders, juicers, forge blowers, washing machines, spin driers, lawn mowers, ploughs and boats."

In short, for transport, power to run machinery or to generate electricity, Peter will pedal it if he can. His bicycle, *Yellow Pedals,* bristles with equipment including two hub dynamos which charge 6 volt and 12 volt batteries to run a stereo cassette tape deck, a combination AM/FM/CB radio, a horn, four loudspeakers, a light system and a burglar alarm.

After modifying the gears, Peter loaded up the heavy frame cycle with gear like a tent, sleeping bag, foam mattress, portagas stove, food, tools, spare cassette tapes, panniers and a water bottle and pedalled 2500km from Nimbin to Berri, South Australia for a ConFest.

Faced with the problem of trickle charging a 12 volt battery to run small appliances at home, Peter turned to wind power, and characteristically built a bicycle wheel generator from old bike parts (see separate story). "A lot of the stuff I build is recycled from the garbage tip," says Peter.

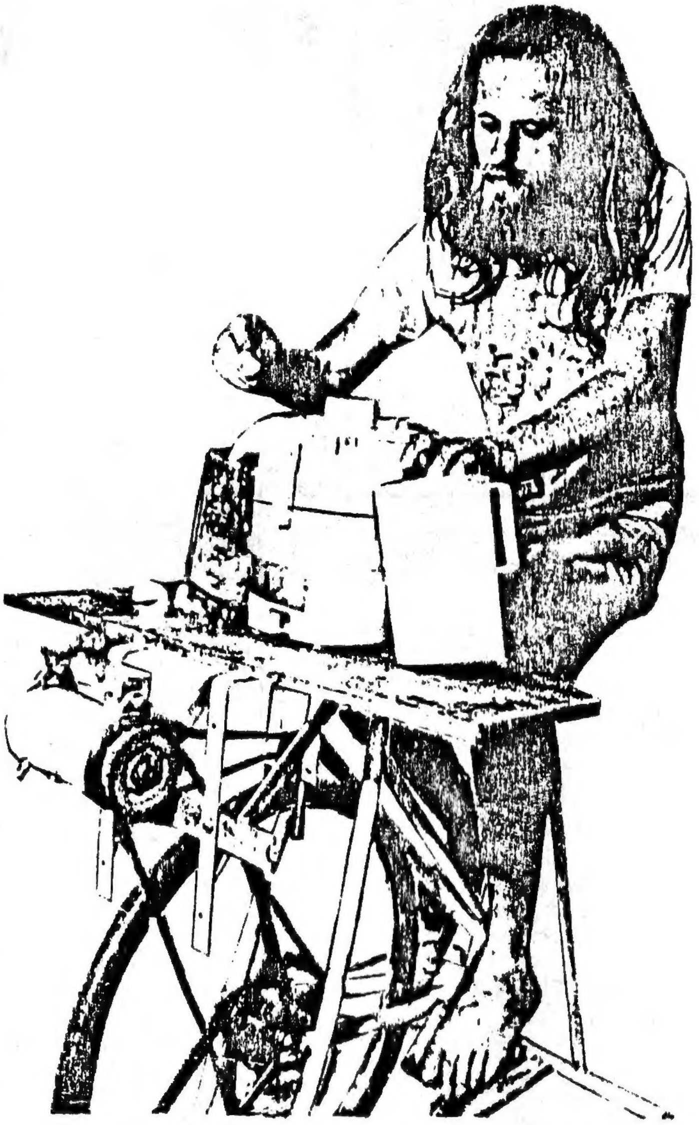
These comments on bicycles and pedal power by Peter van der Wyk are taken from the latest issue of *Green Alliance* newsletter, available for $10 a year from PO Box 31, Nimbin, NSW, 2480.

For the equivalent calories that are contained in one gallon of petrol, a bicyclist can cover 1100 miles. To divert 10 per cent of the population from cars to bicycles would save Australia 30 million barrels of oil per year, which is a saving of about $1000 million dollars. Sixty per cent of atmospheric pollution comes from automobiles.

An average city auto trip of 2½ miles takes only five minutes more by bicycle. A bicycle can easily share a living space and can be parked, cycled and carried to almost anywhere. And if you have a problem a bicycle is cheap and easy to fix.

Using an exercise bike and a discarded spin drier unit out of a twin tub washing machine I built a pedal spin drier with a gear ratio of about 30-to-one. This works so well that the first time I tried it out I could hardly believe it. Within a minute or two I could get an entire wash load practically touch dry.

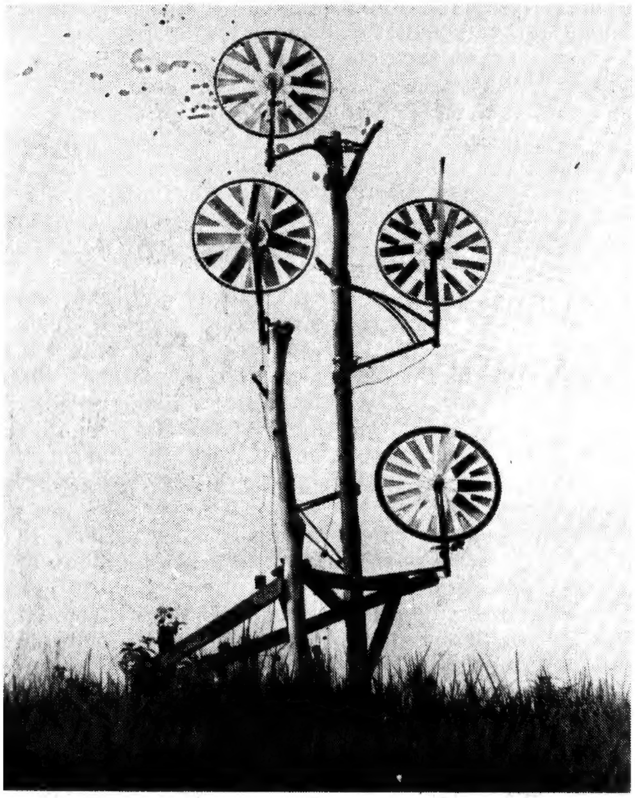
For some reason it seemed to work better than an electric spin drier, maybe when I reach maximum pedalling it spins faster.

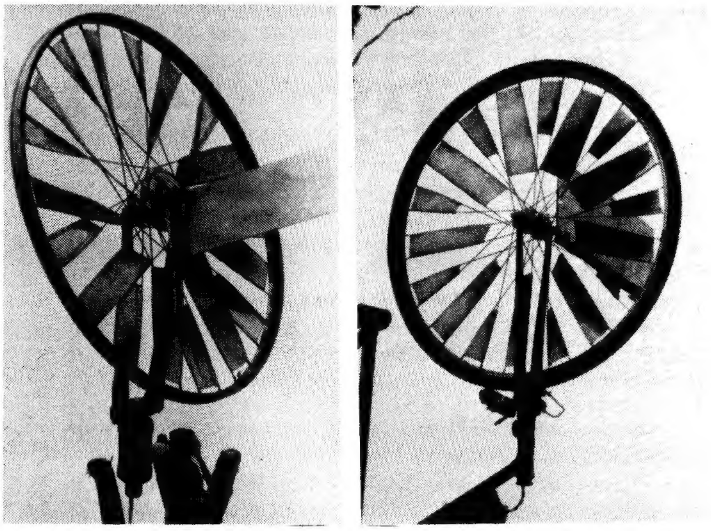


I have a hand operated flour mill for which I welded up a base onto which I could mount it. I fitted a bicycle chain wheel (front sprocket) where the handle goes and connected it with a bicycle chain to a set of pedals mounted on the same base and made flour milling faster and easier.

My main battery charging systems are a photo-electric solar panel and several wind generators built out of bicycle wheels, front forks and dynamos. I don't need a refrigerator but whenever I want I can rig up a Coolgardie safe to keep things cool.

I am considering building a pedal lawn mower, a pedal pump and a pedal plough in the not too distant future. If I was living on a waterway I would have built myself a pedal powered boat. I have built a very low geared tricycle which I use as a utility truck to transport large and heavy objects.





A 'tree' of four of Peter Pedals' bicycle wheel wind generators at work at Nimbin, New South Wales. The windwheels are made by folding galvanised sheet metal over the spokes. Each one pivots on bicycle front forks and head stem bearing and uses a hub dynamo like the Sturmey Archer Dynohub (centre) or a rim dynamo running on the tyre, such as the Sanyo Dynapower (at right) to charge a 6 volt or 12 volt battery.

A BICYCLE WHEEL WIND GENERATOR

By Peter van der Wyk

The best feature about bicycle wheel wind generators is that with all the bicycle parts and bicycle tools on hand you can build one within two hours with no need for welding or fancy workshop tools.

Galvanised sheet metal is folded over the spokes to make two sizes of vane which creates the propeller design. The wheel is then mounted in bicycle forks and bicycle head stem assembly, with an added wind vane.

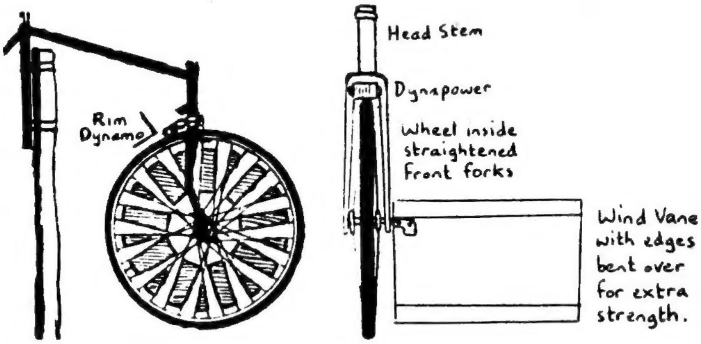
The spinning wheel windmill runs a bicycle dynamo, either hub or rim type, to trickle charge batteries. The bike frame is used to mount the assembly.

You will need an old bicycle tyre, tube bicycle frame, bicycle generator and a full wave bridge rectifier. It doesn't matter if the wheel is old and rusty as long as it doesn't wobble very much, has no spokes missing and has a smooth freely running axle. The spokes do not need to be particularly strong.

The tyre and tube just need to be able to hold air and have a dynamo running on it. Apart from this they can be as worn as you like. The frame may be quite severely damaged and useless as a bicycle. Virtually the only part of the frame that needs to be any good is the head stem, through which we have the front forks swivelling on a set of ball bearings. These ball bearings need to turn quite freely.

A *rectifier* is a device which turns the low voltage alternating current (AC) generated by the bicycle dynamo into direct current (DC) electricity for battery storage. You can buy a 50 volt, 4 amp full wave bridge rectifier for about $2.

I have found the best arrangement for the blade construction to be by selecting those spokes that give you two different blade sizes alternating all around the wheel. The larger blades should have a very nice gradual twist in them that is almost on the same plane as the wheel near the rim and becomes steeper and steeper towards the hub. This will allow the tips of the blades to cut through the air faster as it has a greater circumference to travel through in the same time. The smaller blades twist a little faster and so I keep them quite short, otherwise they act as brakes.


Rim Dynamo
Head Stem
Dynapower
Wheel inside straightened Front forks
Wind Vane with edges bent over for extra strength.

If you study your wheel carefully you should find two pairs of crossed spokes going to the left and right side of the hub. In between these crossed spokes and the next there will be an apparently larger space where the spokes appear to be almost parallel. One of these spokes will be going to the left flange on the hub whilst the other goes to the right flange. If the area between this set of spokes were filled in with a thin sheet of metal you should find its shape to be not unlike a propeller blade with a gradual change of angle in relation to the rim or hub.

When cutting the galvanised metal sheets make sure you have measured the shapes correctly. The big sheets start a couple of inches from the rim and stop where the spokes cross. You will find here that the distance between the two increases as you go from the rim to the centre. You must give yourself a half inch margin on either side to enable yourself to fold the sheet around the spokes.

I have found it easiest to start folding the sheets in a vice and to finish it in position on the wheel with a pair of pliers. The smaller blades need to be kept to about half the length of the larger blades so that their pitch never becomes too steep. We now fit the tyre and tube onto the wheel and fill it with air.

Rim dynamo: The dynamo that I am having considerable success with is a *Sanyo DynaPower* 6 volt 3 watt (NH-050 sbe). It produces very little friction. It looks like a little cylindrical wheel that rides on top of the tread of a tyre and has all of its electrical components (except bridge rectifier) inside the hub of this little metal cylinder.

I found that the thread on the bolt that holds on the caliper brakes often has the same thread. By finding a long enough bolt to bolt this dynamo onto the front forks where the brake is usually affixed (you may have to drill a hole) you can now bolt it into position. It doesn't matter whether they are on the front or the back of the forks as long as it doesn't apply a great deal of pressure onto the tyre. It must touch the tyre at all times when the wheel spins, but the pressure must be kept to a minimum.

Hub dynamo: Another excellent dynamo for a bicycle wheel wind generator is the *Sturmey Archer Dynohub.* This produces even less resistance to turning but it doesn't develop as high a voltage as the other. A problem that you may encounter with the Sanyo DynaPower is that once it's mounted on the forks, it may prevent the forks from turning a full circle. It doesn't matter which way round the forks go. You may eliminate this problem by turning the forks upside down inside the frame (with a ladies' bicycle frame) or by cutting away one of the bars (as in a gent's frame). If the neck of the forks is any longer than the head stem on the frame you may be able to pack the forks out, away from the frame, to allow more space for the dynamo.

If you can get hold of a small right angle bracket (such as a wheel hub light bracket) you can bolt a fairly strong but thin sheet of metal (lightweight) onto one side of the forks at the hub (using the nut that holds the hub in place).

In light wind conditions the Sturmey Archer Dynohub is superior, but it is also twice the cost and more difficult to obtain. You may even have to send away to England to get one.

If you are charging a 12 volt battery with the hub dynamo you can increase the efficiency by having two of the same wind generators mounted side by side with the positive of one bridge rectifier connected to the negative of the other. The remaining positive then goes to the positive of the battery and the remaining negative then goes to the negative of the battery. By doing this your battery will be charging in a much lower wind velocity.

The rim dynamo needs a higher wind velocity to start turning but once it has started it will increase to produce 12 volts quite easily.

You can now mount the whole thing on top of a post in a windy position so that the fork bearing is absolutely vertical and the wheel bearing horizontal. In the case of the rim dynamo we need to connect the wire coming out of it to one of the corners of the bridge rectifier with a little wavy line marked on it (signifying an AC inlet). The other wavy line connects to a metal part of the dynamo, forks or frame.

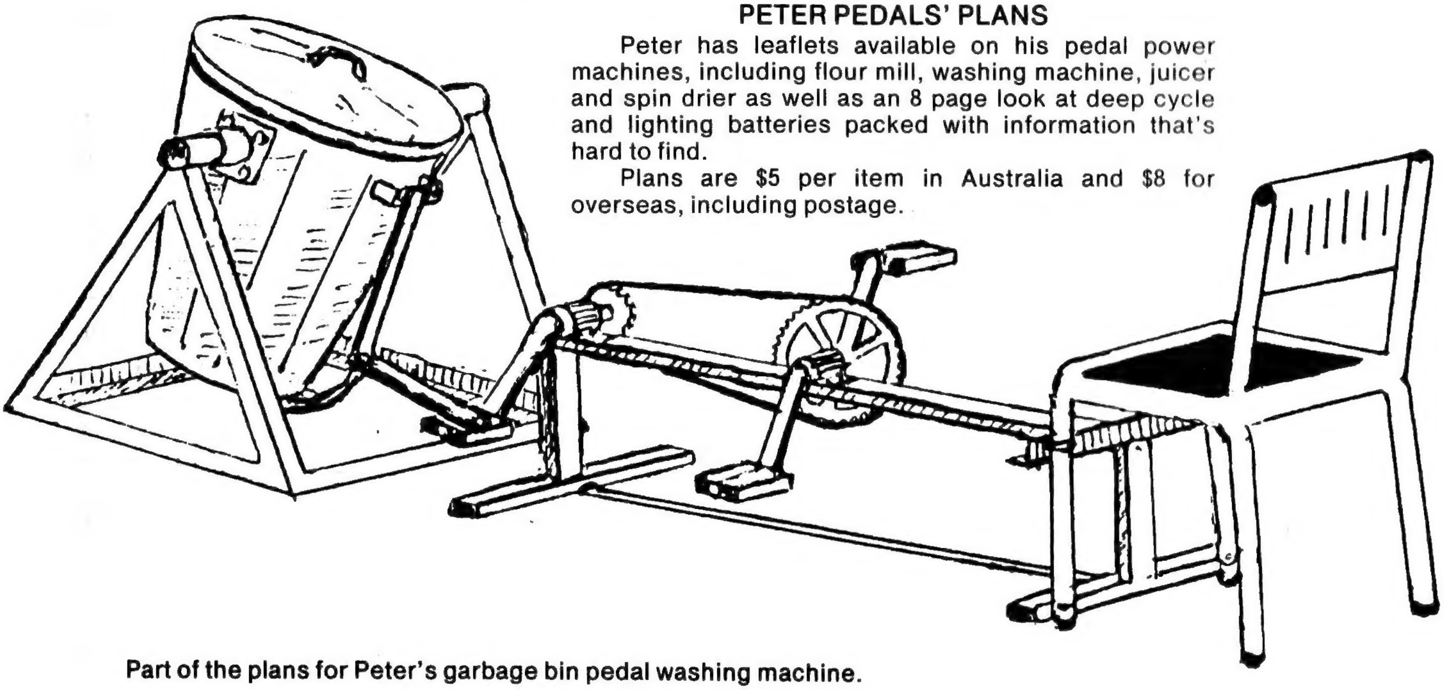
In the case of a Dynohub, both wires connect to both AC inlets. The positive and negative terminals on the bridge rectifier connect (via as short as possible length of wire) to a rechargeable battery (anything from 3 to 12 volts).

Although the dynamo is only rated at 6 volts it seems to have very little difficulty in spinning fast enough to produce 12 volts under windy conditions.

PETER PEDALS' PLANS

Peter has leaflets available on his pedal power machines, including flour mill, washing machine, juicer and spin drier as well as an 8 page look at deep cycle and lighting batteries packed with information that's hard to find.

Plans are $5 per item in Australia and $8 for overseas, including postage.



Part of the plans for Peter's garbage bin pedal washing machine.

Alternative energy on the farm

By Laurie O'Donnell

For nearly two years my wife, Shirley, and I have been living on our land, supplied by neither mains electricity nor gas. Our energy needs are met largely by wind electricity, wood heat, kerosene and petrol.

Our place is at Turill, 60km north of Mudgee, NSW, but east of the Great Divide which is quite low to the west and south-west (falls below 500m). It is liberally supplied with green and dead hardwood timber (ironbark).

Mains electric power is available at a price (power lines cross the property) and fuel companies will deliver petroleum products to the door.

Wind

The energy of the wind is captured by a *Winco Wincharger* 12 volt 200 watt generator. We have two sets of 130 ampere hour 12 volt batteries, each consisting of two 6 volt batteries. While one battery set is connected to the Wincharger, the other is 200 metres away at the house being discharged for various uses.

This electricity is used to operate lights, a radio, cassette player, TV set and vacuum cleaner as required.

The main use is for lighting. We use one light of 1 amp from sunset until 9 pm each day. This is a very efficient home built fluorescent light with a 20 watt tube. Other lights are used sporadically and probably for a total of an hour each day.

The TV, drawing 1.3 amps, is used for an average of two hours each day. The cassette player uses an insignificant amount of power, but the vacuum cleaner is very current hungry (probably about 10 amps) and is generally used when we know we can readily recharge the batteries.

One battery set can last from 2-6 weeks, but they are charged at least every four weeks. State of charge is monitored with a voltmeter and a voltage-versus-discharge graph from a recent graph printed in the US journal *The Mother Earth News*.

Battery sets are recharged before the charge falls below 15 per cent. An alternative to this method of monitoring charge would be to recharge the batteries when lights are *just* dulling. An electric fence energiser runs continually on the set of batteries at the generator (drawing 80 mA).

The need to have the generator remote from the house and the consequent carrying of batteries between the two is because the best site for the generator is not the best site for a house. The generator is in an exposed high spot remote from trees on a ridge lying north-south. The house is on an east slope, sheltered from the west by trees. It may be possible to run cables between the two if the technical and financial limitations can be overcome.

The obvious advantages of this part of our system are those of electricity generally and the energy is free. The wind can also blow 24 hours a day. Also, each battery can be recharged (to 100 per cent charge) in a few days if the weather is windy enough. I agree with Abbie Heathcote *(A tight house,* Earth Garden 29) when she applauds electric lights and hates the thought of using anything else.

Shirley O'Donnell with the Winco Wincharger 12 volt (20 watt) wind generator.

The network of electric fencing we use to control mainly donkeys and goats is growing and has been extremely effective.

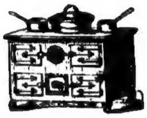
The wind power system has several disadvantages. Obviously, it is totally dependent upon the presence of sufficient wind. We were affected by doldrums in May-June, 1982 and eventually had no electricity. Otherwise, though, there seems to be more than enough wind to generate sufficient electricity for our needs. A small backup system, perhaps solar cells, would probably be sufficient to fill in these windless periods.

The wind power system cost about $1,300 (mid 1981) and this first cost could be seen as a bad point. Running costs *should* be low. Brushes are the only part which could be anticipated to wear out.

The propeller on our unit was broken when it struck a kookaburra during operation. This cost $132.00 (August, 1982) to replace. The propeller also seems to weather quickly while the local agents, Quirk's Wind Energy Co, seem unwilling, or incapable, of supplying anything in the way of technical advice. They appear to stick with sales.

The arrangement of transporting batteries to and from the generator may be inconvenient at times, but is not annoying, though it does prevent both sets of batteries being fully charged at the one time.

The fact that the generator is only 200 watts limits the total output of the system. It could not supply the electricity needs of an average household and a modified view of *needs* is necessary in order to live with it. Fortunately much modern electronic equipment operates on low voltage direct current and this system supplies just that.



Wood

Most of our firewood (99 per cent) goes into our *Everhot* 204 Deluxe cooking stove. This item we have voted one of the best buys we have ever made. It is used to bake, boil and fry. Toasting and barbecuing can be done on the hotplate and the coffee percolator works well on it too. Usually, though, it is not hot enough to enable good wok cooking.

The wood stove is also our space heater. When we install it in our new house it will also provide hot running water. When necessary it can be used to dry clothes (or anything else) hung above it. It has already been used to keep ducklings and chickens alive! It has a warming oven which can also be used for drying. We use a cast iron copper to heat water to wash ourselves and our clothes.

Our vast supply of timber means that we never outlay money for firewood itself. I use a chainsaw to cut most of the wood for the Everhot because it runs best on sizeable lumps of wood — as thick as your arm or longer. If *time* is at all at a premium I could not recommend providing fuel for this kind of stove any other way than obtaining it ready cut. For the copper, smaller pieces are adequate and this wood we smash up with a hatchet.

The new cost of the Everhot complete, including flue, would now be approaching $2,000. Obviously for this sort of outlay you have to be serious about making the most of your purchase. Sooner or later any fuel stove (it seems) will cause a smoke stain on the walls and ceiling of the kitchen or any room it is in. Moreover, they need regular maintenance in the form of cleaning out the works and the flue to remove soot and in disposing of the ashes. Failure to do this will cause dramatically reduced performance.

Cooking on the wood stove also needs more planning because they take longer to heat up and cool down than either an electric or gas stove. In summer, I would rather not get within 3 metres of our stove — it's too hot! As a result, it will have a small, well ventilated room of its own in our new house. I'm sure these stoves run best when operated 24 hours a day as ours is. It goes overnight on a 150mm x 150mm x 300mm lump of ironbark.

We light the copper when we need it and both the copper and the stove can also dispose of combustible garbage. Washing in the copper produces good results, especially considering its simplicity and the little effort involved. Located next to the bath, it helps to keep the 'bathroom' warm on cold nights.

Kerosene

Kerosene is used to overcome what I see as the real snag in alternative energy systems — providing refrigeration. We use a *Silent Knight* kerosene refrigerator that is reliable but rather too small and has no freezer compartment. It consumes between 0.5 and 1.0 litres of kerosene per day, depending on how it is set. Kerosene bought in 200 litre drums delivered is much cheaper than when it is purchased in small quantities.

You can't ignore this type of refrigerator. It must be refuelled regularly and adjusted and cleaned occasionally. It is only adequate up to an ambient temperature of about 38°C, beyond which it completely fails to cope. Its performance could probably be improved by using more insulation.

It would be costly to replace the kerosene refrigerator with one running on LP gas and running costs would then apparently be greater also. New kerosene fridges can be bought for $1,000+. Using electricity to provide refrigeration would involve a great increase in the size of the energy apparatus. This is by no means impossible, but the cost is the precluding factor.

For the time being we will replace the fridge with a larger *Electrolux* kerosene model of more recent manufacture and which does have a freezer. In this way we will be able to give up borrowing freezer space from our neighbours. This move should also necessitate us eating more fresh meat. It should increase our independence and get us away from the 'freezer mentality'.

A small amount of kerosene is also used in the *Tilley* iron, lamps and primus stove — just for wok cooking.

Petrol

Most of the petrol we consume — by far — is used in a motor car for transport. Of this, most is used in trips to town and the neighbours where I work. The battery in the car provides light for the bathroom.

The chainsaw has become an essential piece of equipment but uses little fuel. In an energy sense, it ties in with the wood stove. Otherwise it allows us to utilise one of our major resources — standing green timber.

A little petrol is also used in the water pump. Most of the work it does could be done by a wind pump, but the job would be done more slowly. The petrol pump has the advantage of being able to be used as a firefighter. I consider it quite fuel efficient because it delivers dam water through a large diameter pipe and because it doesn't have to be run flat out to give an adequate rate of flow.

Each part of alternative energy system is storage in nature. Consequently, our energy supply at any time is known — and it's also been paid for before it's used!

One point must be kept firmly in mind. Looking after our energy needs is an ongoing job of observation and maintenance — preferably preventative. Possessing or developing at least basic mechanical skills is a definite advantage in this regard. I don't believe any alternative energy system could be a 'set and forget' one.

I would be happy to answer readers' questions if they write enclosing an SAE. Likewise, I would gladly accept their advice! Thanks to Shirley for the typing and advice.

Laurie O'Donnell, 'Trilling', Durridgere Road, Turill, NSW 2850.

Strike a light!

FIRE WITHOUT MATCHES

By Joe Zolin

Having been brought up in a semi self sufficient type of lifestyle, I rather like the idea of self sufficiency. The trouble is, though, that there are so many things from the outside world on which it is very easy to become reliant.

One of these things is the use of matches for lighting fires. This seems to be hardly worth mentioning at first. Without that little match, though, cooking, blacksmithing and other fire-related jobs get pretty difficult.

With this realisation in mind I became interested in lighting fires without matches, particularly using flint and steel, which I chose because the materials are readily available. Also you aren't relying entirely on something like the sun being out (as you would using a glass lens) to be successful.

To light a fire with flint and steel, you need three main 'ingredients', a few minor ones and a handful of techniques.

The three main requirements are: flint, steel and tinder.

For flint, I have used agate, jasper and quartz. Other very hard rocks, such as chalcedony are also reputed to work. I'd be very surprised if flint itself isn't useable! A piece of flint about the size of a matchbox is best, though I have used both larger and smaller pieces successfully.

The steel has to be hard tempered, high carbon steel. Old files are ideal. Knife steel is also good, so long as it is not an alloy or stainless steel. I prefer old files because I don't like the idea of hitting a good knife against a piece of rock.

The tinder, probably the most important ingredient of all, you make yourself. This is done by setting fire to a piece of clean, dry cotton cloth, letting it burn until the flames go out, then putting the still glowing, charred remains into a clean, dry, airtight tin (a clean tobacco or boot polish tin is perfect). The lid is then placed on the tin and the whole lot is left to cool off.

Once you have the ingredients together, the next step is to learn the technique of striking a spark:

Hold the piece of flint in your fist with a good strong grip. Leave about half of the stone exposed. Strike the exposed stone with sharp glancing blows. Aim for ridges and edges on the stone as these give a better chance of sparking. It is wise to strike the flint with a blow roughly parallel to the ground, otherwise, when you are attempting to light the tinder you may end up scattering it instead.

Once the spark striking technique is mastered, you need to collect the minor ingredients before fire lighting.

These consist of a handful of *bull's wool* — rubbed bark or dry grass or other dry, finely fibrous vegetable matter — and the normal twigs, sticks and pieces of wood used in lighting a fire.

When the various bits and pieces are together, take the lid from the tinder tin and strike sparks into the tinder. Where the sparks hit the tinder glowing patches will start. Quickly remove one of these, plus a small amount of the surrounding tinder and put it in the bull's wool.

Blow down gently, then with increasing vigour on the glowing tinder in the bull's wool (I prefer to hold the bull's wool in my hands while doing this, but beware of getting burnt). The bull's wool should catch fire. When it does, put it in the fireplace, then lay the twigs, sticks and pieces of wood on top. Be careful not to put them on too fast as they will smother the fire.

You don't have to stick exactly to the letter of what I've written. Most of it, though, has been found suitable through practice or common sense. For instance, keeping tinder in a tin isn't strictly necessary. After all, early tinder users kept theirs in wooden containers, but a tin is readily available, you can be certain it won't catch fire and it is reasonably airtight.

There is one main flaw in the art of lighting fires with flint and steel as I have written it. That flaw lies in the preparation of the tinder. If you prepare your tinder while you are still using matches this poses no problem, but otherwise you may have to use raw materials for your first lot of tinder.

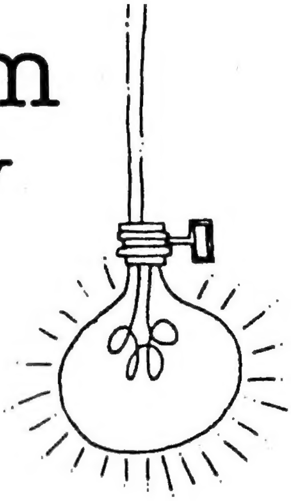
If this is the case, then your best bet would be to use something as fine as possible, something like thistledown or *very* finely rubbed grass. Make this fluff into a ball thick enough to catch a spark, but not so dense as not to let in air. Strike sparks into this ball, treating it like normal tinder. You will probably need to strike a fair few sparks to get it to catch fire. Once it does catch alight, it will burn very quickly, so make sure you have all the other ingredients at hand.

Fire lighting kit

If you find that you don't have the time or the resources for making yourself a fire lighting kit, I make and sell one. The kit consists of a tin of tinder, a steel and a piece of flint. The kit can be purchased by sending a cheque or postal note for $6.00 to *Malemijo,* Swifts Creek, Victoria 3896.

Please make sure you tell me what you want as well as giving me a return address. As much as I like donations, I'd much rather give you something for your money.

House lights from your car battery



CAR ENERGY PACK

From **Sunstream**, PO Box 208, Gordon, NSW 2072. Price $149.00 posted in Australia.

After a half hour drive there's enough electricity in your car battery to run small 12 volt appliances — such as lights and TV — for several hours, with enough power over to safely start your engine next day.

You don't have to be an electronic wizard to harness this hidden energy under your car bonnet because this simple battery power pack designed by Stephen Pascoe of Sunstream has built-in safeguards against flattening your battery or wrongly estimating your power load.

It's easy to install. All you need to do is to bolt two connections to your car battery terminals and run a lead with a two-pin socket 'power point' to a spot under your front bumper bar. Then when you arrive at your holiday home, weekender or country shack, all you need to do is to plug a cable into the car point and go inside to use whatever appliance you require.

You could run a lead to your tent when camping to listen to the radio or use a 12 volt drill or circular saw while building your home where mains 240 volt power has not been connected.

With the energy pack, your car gives you power as well as transport. It will help you to understand the principles of careful, energy efficient use of low voltage direct current (DC) electricity and is a good standby for emergency use.

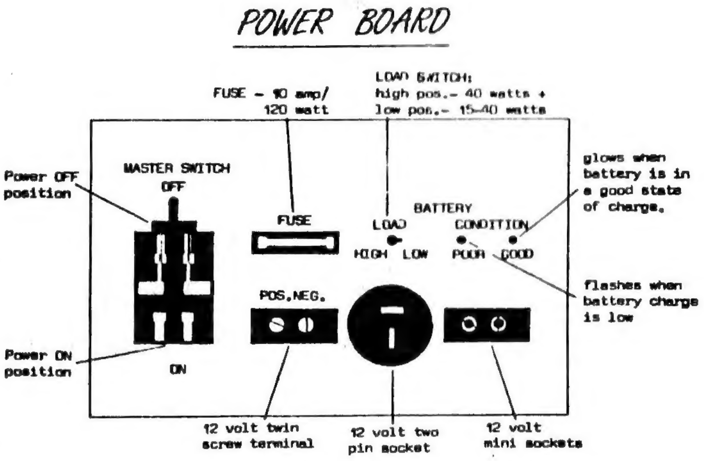
Don't expect to use it for devices which draw an extravagant amount of current, such as colour television sets, refrigerators or deep freeze.

In normal driving, the alternator in your car charges the battery until the voltage regulator indicates there is a sufficient charge. This usually takes only about 15-20 minutes of driving.

Stephen estimates that most cars driven for half an hour a day can supply at least 150 watts of 12 volt DC electricity surplus to motoring needs. This would provide a 16 watt fluorescent light with five hours (80 watts), an 11 watt 12 inch black and white television set with four hours (44 watts) and an 8 watt radio or cassette player with three hours of operating time (24 watts) per day.

The pack, which comes in a big cardboard box, contains everything you need to run the car battery system. It's hardly possible to make a mistake and clear printed instructions are provided. The box contains a power board, car battery lead, 16 watt fluorescent light and battery maintenance equipment.

The power board has a master switch and four outlets which only have power when the switch is 'on'. The



master switch draws only ¼ watt, so it would not flatten a fully charged battery even if left on by mistake for a month without other devices drawing power.

A 10 amp fuse on the board will blow if the total current drawn from all outlets exceeds 10 amps or 120 watts (and there's a spare fuse).

The battery meter is a charge indicator which helps you monitor the load condition of the battery. The green light shines when the battery is well charged and flashes red when you have 30 per cent or less of the available energy in the battery.

The power board has 10 metres (32 ft) of heavy duty low voltage cable which plugs into the battery socket in your car.

The **fluorescent light** is made up of 2 x 8 watt tubes and a plastic cover and has an on/off switch and four metres (12 ft) of cord which plugs into the power board (when the light is green). It may be mounted on the wall and a screwdriver and screws are provided in the kit to do this.

There's also a **hydrometer** to keep an accurate check on the condition of your battery and a one (1) litre container of distilled water to keep the battery topped up.

The car energy pack has a three month warranty on parts and labour.

Change DC to AC

12 volt DC to 240 volt AC Inverters

300 watt inverter, $300.00, plus freight, with auto start, $400.00, plus freight. Delivery time 2-3 weeks, from Dr M. Glass, Upper Bowman Road, Bowman River, via Gloucester, NSW 2422. Send SAE for further information.

An inverter is a device that lets you operate "mains" 240 volt alternating current (AC) powered appliances from a 12 volt direct current (DC) source, such as a car battery or a 12 volt solar storage battery bank.

This inverter has the following features:

Output power: Any load up to 300 watts maximum.

Frequency stability: 50 cycles (per second) mains output, quartz crystal controlled.

Efficiency: Between 60%-80% with typical operating loads.

Output voltage regulation: Mains output voltage remains constant regardless of load.

Overload protection: Current limiting protection against accidental overload or short circuit. Ultimate shutdown if overheating occurs. Fuse protection against accidentally reversed battery connection.

Auto start (optional): The inverter can be fitted with auto start which automatically switches inverter on when an appliance is connected. In this mode standby power is negligible.

Guarantee: 6 months guarantee against malfunction.

Monty Glass lives in a mudbrick cabin with a turf roof which he built himself at Bowman River, NSW. "Life is 'hard' in many ways," he says, "but I love it here and doubt whether I could ever return to civilisation."

It's been three years since Monty said "goodbye" to Sydney. As well as the 12 volt DC to 240 volt AC inverter detailed here he offers an engineering design consultancy and can help people with design and installation of alternative energy, pumping and piping (including trickle irrigation), electro-mechanical devices and alternative building (including drafting plans and mudbricks).

He has a Bachelor's degree and PhD in mechanical engineering to back up more recent experience as a new settler.

Monty Glass with the small mudbrick house at Barrington Primary School which he says he helped — 'in a minor way' — to put up.

ALTERNATIVE ENERGY UPDATE

Blue Ridge Solar

Alternative energy supplies

8 Nullum Street, Murwillumbah, NSW 2484. Phone (066) 72 4033.

"We came to live in this beautiful area six years ago," say John and Maureen Cooper of *Blue Ridge Solar* at Murwillumbah, NSW. "After building our own home around a self-sufficiency concept and experiencing all the downfalls and rewards of such a system, we decided to open a shop specialising in alternative energy products."

They say that generating your own electricity from the safe, renewable sources of wind and sun is ecologically sound, will set you free from ever increasing bills and power strikes and is an investment in your future.

"Our systems range from a home lighting kit through to a system with an inverter to produce 240 volt power. A basic home lighting kit comprises a *Tideland* 35 watt, 16.6 volt solar panel, a 90 amp hour deep cycle battery, a 16 watt fluorescent light, an 8 watt fluorescent light, a 12 watt high intensity desk lamp, 10 metres of cable, a diode and battery clamps for $630.00."

Blue Ridge Solar is associated with the Appropriate Technology Retailers Association. They also sell accessories, lights and appliances such as ceiling fans to use with the solar electric system and install solar hot water units — "a great benefit in our wonderful climate!"

SOLAR STREET!

Solar Charge Pty Ltd, supplier of solar electric systems and equipment (See: Solar electric refrigerator, *Earth Garden 37,* page 10) has moved to 122a Martin Street, Gardenvale, Victoria 3185. Manager John Paton tells us that all the solar components are on display with working models in the shop window when the sun shines. "We have the solar fridge working and clients can see the results — frozen foods," John says.

A couple of doors away is *Somer Solar,* who are involved in solar hot water and low energy houses. Says John Paton: "Martin Street has almost become a solar centre. People from the country won't have to go driving all over Melbourne now."

COMMUNITY APPROPRIATE TECHNOLOGY ASSOCIATION

The Association has been formed in Lismore, NSW and may be contacted at the North Coast Environment Centre, 123 Keen Street, Lismore, NSW 2480. Phone (066) 21 3278.

(Information from Andy & Toni Usher)

Outlook Alternatives

Outlook Alternatives *(Earth Garden 38,* page 6) advises us they are not now opening on Sundays. Hours are Monday to Friday 10 am to 5 pm and Saturday, 1 pm to 5 pm. The address: Greta West Road, Oxley, Victoria.

Survival Technology

Sorry, we gave the wrong phone number for Survival Technology's shop in our Access survey of alternative energy equipment in Earth Garden 38. It should be (03) 725 5550 (we left out a '5').

John Cooper of Blue Ridge Solar.

Preparation for Homebirth

For Australian Parents

Edited by Wendy Whitton, written by Homebirth Support Group, Katoomba, 1983, paperback, 32 pages. Price $3.00 post free from BMHBG, PO Box 43, Leura, NSW 2781 (orders of 10 or more, $2.00 per copy).

It should be a woman's right to bring forth her child in the place of her choice, be it home or elsewhere . . . This book is intended to extend our support beyond local boundaries, to all Australian parents. (Foreword).

Like the other contributors, the editor of Preparation for Homebirth, Wendy Whitton, speaks from experience. Tom and Wendy's second healthy baby, Samuel, was born at home on March 1 and so was their first son, Saul.

The book is made up of short but informative sections on emotional and physical preparation for homebirth, nutrition, birth experiences, breast-feeding advice, two fathers on their role and a delightfully illustrated piece on yoga for pregnant women.

There's a good follow-up list of books and contacts and some good recipes and herbal remedies for mothers to be. It's Australian, thorough, and highly recommended.

THE FRANKLIN
Not Just a River

James McQueen, Penguin, Ringwood, Victoria, 1983, paperback, 85 pages, illustrated. Price $6.95.

Take away the plants, take away the animals, destroy what remains of the wilderness, and slowly but surely this earth of ours will run down. It will become a drab, uninteresting, miserable place providing little or no inspiration for the artistic and cultural aspects of humankind. Civilisation as we know it will no longer be possible.

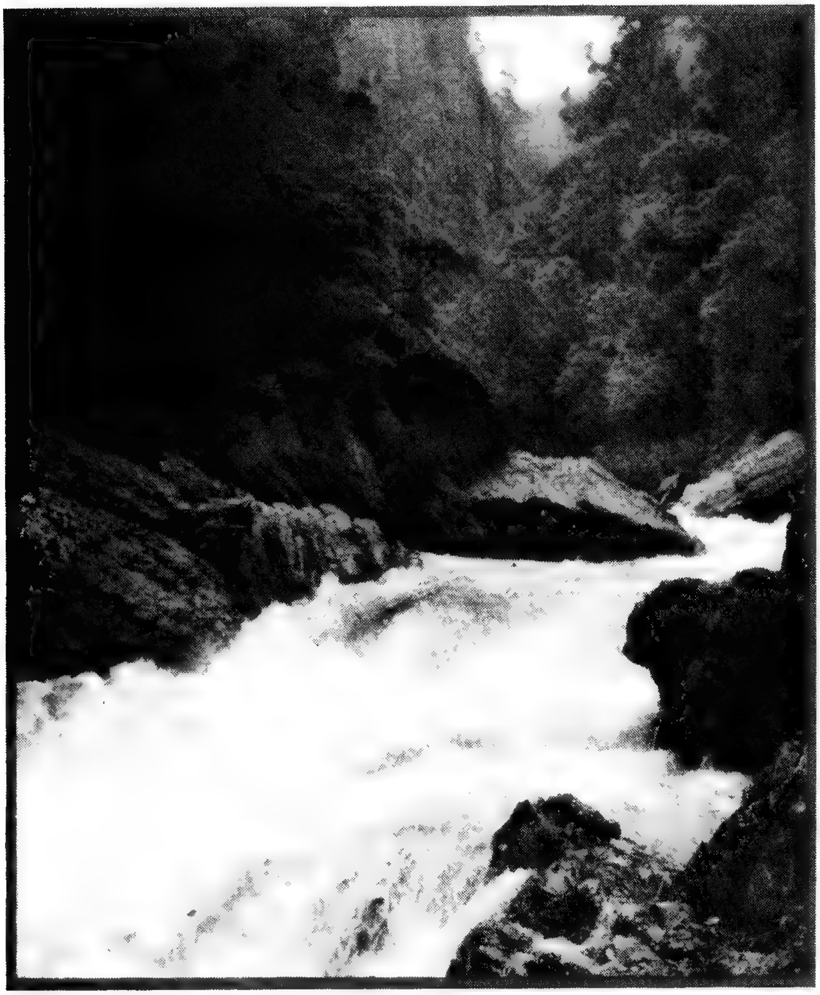
From the Introduction by David Bellamy.

It was a battle, like Vietnam, fought every night on our television screens, as hundreds of conservationists arrived from all over Australia to be arrested to stop the damming of a Tasmanian river called the Franklin. James McQueen, author of Hook's Mountain, *was a combatant and tells the story of the struggle with his own "despatches" in a powerfully written, committed narrative.*

McQueen paints the background of the beautiful river, the political repression, the mining towns, the greenies, the events and the aftermath with vivid portraits of Dr Bob Brown and Norm Sanders. Penguin makes a beautiful book around it, with colour and stark black and white photos. — Keith.

This informative, often emotional account, should be read by young and old, conservationist or not. It is part of the history of our times. Hopefully, its ending won't be just a victory in the courts, but a new beginning of global co-operation and understanding about the wilderness. We owe it to ourselves, our country and our children. — Irene.

THE FRANKLIN
Not Just a River



It seems to me now that the river — the River — is not just the Franklin, not just a river. For those of us who have been drawn, often despite ourselves, to its defence, it has become far more than the sum of its parts. For me it is the epitome of all the lost forests, all the submerged lakes, all the tamed rivers, all the extinguished species. It is threatened by the same mindless beast that has eaten our past, is eating our present, and threatens to eat our future: that civil beast of mean ambitions and broken promises and hedged bets and tawdry profits.

I am in my forty-ninth year. My son and daughter are fifth-generation Tasmanians, and of the land I knew as a boy there is to my sorrow little left to show them.

. . . I knew that I had to do *something*.

Early in January I telephoned my son Stuart, told him I was going to the south-west to be arrested. He asked if he could come with me. So, on January 6, on the cold and windy Crotty Road, we were arrested, with our twenty-five companions.

When it was over, it seemed too small a thing. But at least it was a start.

A government instrumentality, the HEC, proposed to build a dam within a "National" (really a State) Park. The Government of the day offered the public a referendum which permitted a choice between *two* dams, both within the Park. There was no "no dams" option. The result was a massive informal vote in the referendum.

Later, in a State election, *both* major political parties openly espoused the cause of a dam; thus there was *still* no way for the people of the State to register a valid protest against the dam.

Huon pine (is) a very slow-growing tree, it never reaches a very large size. It matures at about 500 years, then lasts sometimes for thousands. In 1975 a tree was felled to make way for the Middle Gordon Dam which was estimated to be at least 2183 years old. When a similar tree was felled by the HEC (Hydro-Electric Commission) near Warner's Landing early in 1983, blockaders and watching policemen wept.

Backyard food growing

INTENSIVE PLOT

By Royce Bond

Even living in the city, in a flat with hardly any backyard, we have found that we have been able to grow quite a bit of our own food.

The main problem facing us was the lack of space in which to plant vegetables, but this was not insurmountable. Initially, we chose rather than try to increase the *area* of our garden to step up the *efficiency* of what ground we did have.

We came up with a system of intensive organic cropping. The key to this was to provide the necessary *plant food* to sustain a high density of plant life.

The way *not* to do this is the use of fertilisers. Shop bought fertilisers are all right as a stop gap in the short term, or to correct deficiencies in the soil, but long term use to provide a food base for your plants endangers the soil.

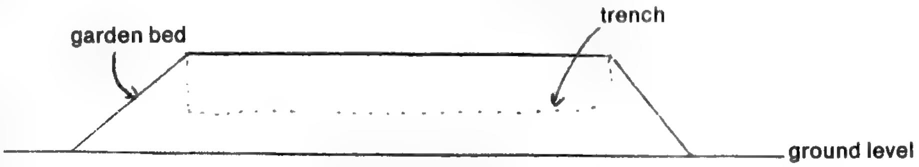
The soil is like a living organism, with myriads of creatures locked in complex life cycles. When the soil is abused, it dies.

Our key plan was to feed the vegetables, but in such a way as to enhance the quality of the soil. All we had to begin with was a knife, a cutting board and our table scraps, excluding animal and dairy products.

Each day's peelings are now diced up and put into a small bucket with an air-tight lid. After three or four days these peelings start to break down, so it's a good idea to keep the bucket outside.

Next you have to prepare your ground, in a sunny spot, but not on the western side of your flat or house, as in summer it will get the afternoon sun and your plants may wither.

One hint for preparing your intensive garden is to hill up the earth, possibly up to 7-8 inches above ground level, as the people do in Irian Jaya (former Dutch New Guinea). This way you prevent drainage problems in small confined spaces.



Intensive garden bed

Also it enables you to prepare your soil in such a way that you are guaranteed good results from small plots of ground. That is, you dig a series of trenches in the mound. The width of the trenches depends on what vegetable you wish to plant, but it's usually no more than 2½ to 3 inches wide and about 4 inches deep.

In these trenches you put down a thick layer of diced up table scraps mixed with mulched grass clippings — made by putting lawn clippings or leaves in a black garbage bag and leaving in the sun for a week or two. Above the mulch, put a layer of dirt in which to plant your seeds.

By the time your plants have grown enough to send down their roots, the mulch and the vegetable scraps have broken down and provide a concentrated food base for them. So you are able to grow more intensively without adverse effects. After the first crop has been harvested, it's necessary to replenish the food base before the next crop.

A useful hint is the use of Epsom salts (magnesium sulphate). When I put a tablespoon of salts in a bucket and then water my vegetables with it I get better results.

Using these ideas I've been able to plant vegetables extremely close together and get fresh, tasty food from our tiny city garden.

Change your diet

The Australian and New Zealand Book of Whole Meals

Marcea Webber, Doubleday, Sydney, 1983, large format, limp cover, 174 pages, illustrated.

ROSEMARY WHOLEWHEAT BREAD

1 cup lukewarm water
1 tablespoon dry yeast
¼ cup maple syrup
4½ cups wholewheat flour
2 teaspoons sea salt
2 teaspoons dried rosemary
1 egg
¼ cup water

Place water in bowl. Sprinkle yeast over water and stir lightly to dissolve. Add sweetening. Cover and let rest. When yeast starts bubbling, stir in half the flour and beat. Add the salt, rosemary, remaining flour and water. Turn onto floured board and knead 10 minutes. Place back in oiled bowl, cover and set in a warm place to rise until doubled in size. Punch down, oil two warm bread tins, shape into loaves, sprinkle the bottom of each pan with maizemeal, and place in dough. Slit the top. Cover with a damp cloth, set in a warm place to rise (about 30-45 minutes).

Brush surface of loaf with egg wash consisting of 1 egg beaten into ¼ cup water. Bake at 180°C for 50-60 minutes (do not preheat oven), with a pan of water in the oven.

My approach to cooking is nothing more than an understanding and respect for nature. I began to realise (thanks to Michio Kushi, Aveline Kushi, Cornelia and Herman Aihara and Lima and George Oshawa) that everything in the universe is nothing but a system of opposites: night and day, sun and moon, man and woman, heaven and earth, fire and water. So it is that by appreciating and understanding these opposite yet complementary forces (like summer and winter, the needs and foods that accompany them, how the seasonal foods grow, their water content, shape, size and colour), we can begin to understand how and when to use them to best suit our needs.

Marcea Webber teaches cookery at the East-West Foundation in Sydney and this book is a course in changing your diet to macrobiotics. It is a beautifully presented book (design, illustration, colour photos), with many recipes arranged for the seasons, backed up with a grounding in the philosophy, nutritional sense, Oriental ingredients, techniques and kitchen tricks and planning. No meat recipes, but many for seafood.

A SENSE OF HUMUS

It's amazing how much food can be produced from a small amount of space using intensive organic growing methods which don't require expensive and polluting chemicals and machinery.

In Gladstone, Queensland, John Last's productive backyard vegetable garden has won several prizes and attracted plenty of attention in the local press. It is based on the 'continuous mulch' system, using bales of wheat barley and pasture grasses and incorporating plenty of compost, cow manure and other natural materials.

John makes good use of industrial wastes such as peanut shells, cotton ginnery wastes, cereal and grain wastes, peanut shell pellets, sunflower residues and a 'salad' of vegetables wastes to feed the soil.

by John Last

Originally our garden beds were built up from what was left in the yard when our house was built, plus some so-called top-soil, plenty of manures, compost and a lot of straw, in fact many hundreds of bales. However, I find that I am using fewer bales each year the longer I use the straw.

Some of the other materials and products that I have or am using are mushroom compost, sugar mill by-products, dolomite, rock phosphate, processed poultry manures, blood and bone (dry or liquid), seaweed (fresh and liquid), leaves, bark, lawn clippings, cottonseed meal, soybean meal, linseed meal, peanut meal and fish emulsion.

We grow the types of vegetables that suit our climate which the family enjoy, vine varieties during the warmer part of the year and other vegetables during the cooler part of the year. A lot of the work is being done by the multitude of earthworms beneath the mulch.

I save and swap some seeds with Brisbane Organic Growers Group (BOGG), Darling Downs Natural Growers Group, Toowoomba and with friends in the district.

Our most popular recipe is coleslaw, made using a hand operated *Moulinex 445,* using all the vegetables available in our garden.

As I work full-time, the garden is a hobby city type, rather than a more self-sufficient type which includes animals and tree crops.

The most used tools include a 'tailor-made' single pronged cultivator for getting the compost out of the bottom of the heap, a pitchfork for the straw, small transplanting trowel, foliar spray attachment fitted to the garden hose, wheelbarrow, shovel and the lawn mower.

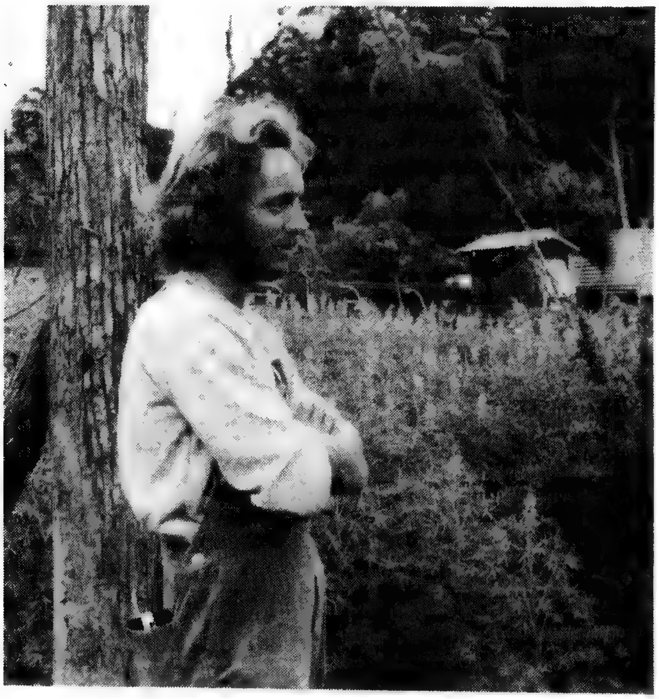
My current compost container is a length of metre-high galvanised sheet metal made into a circle using clamps. It's mounted on bricks, so I can get compost from any position around the circumference.

Our garden was waterlogged, but well drained, during the *Big Wet* here this year. There has been 1024mm of rain to date, compared with the average annual rainfall of 944mm — and it's raining again!

An organic gardener must have a good sense of humus!

John Last & garden. Photo Gladstone Observer.

Avocados for everyone



Andy Frame, with leucaena bushes in background.

By Andy Frame

Perhaps the first thing to say about avocados is grow them — and grow plenty!

Fill your baskets all year round with this exceptional fruit and worship it as our family does, in salads, in milk shakes, on top of your main meal, for *Persea americana* is a nutritionally balanced food that complements all meals.

"Four or five *tortillas* a day, an avocado and a cup of coffee," quotes Wilson Popenoe, author of *A Manual of Tropical and Subtropical Fruits* (Hafner, New York, 1974), when describing the standard meal of the Guatemalan Indians, adding "this is a good meal."

And a good meal it is, for the avocado contains no less than 11 essential vitamins and 17 minerals, as well as being made up of 97 per cent digestible oil, with a high B complex breakdown, especially valuable to vegetarians. While carbohydrate content is much lower than in other common fruits, the protein value is two-to-three times higher.

Avocados will grow in many parts of Australia, from Cairns in the tropical north to as far south as the select micro-climates of the Murrumbidgee Irrigation Area. A commercial plantation exists behind Wollongong, south of Sydney and bearing trees in Sydney are common.

To succeed where many have failed, close attention should be paid to the following factors, while an organic 'bent' is simultaneous with the growing of healthy avocado trees.

Soils

Drainage means everything as the avocado is highly susceptible to the widespread root-rot *Phytopthora cinnamomi* and oxygen starvation, resulting in a terminal onset of root blackening and decay, followed by gradual tree decline and death.

So if you don't have free draining soil, preferably red volcanic, or a gently sloping area of reasonable topsoil depth, about one metre, with sufficient humus and a good tilth, without excessive clay, don't give in, you may still be in the race.

Mounding to increase the topsoil depth, or shaping a shelf on a slope can make the drainage sufficient to support tree growth at least through some years of bearing. A friend has ½ metre mounds supporting healthy two year old trees on a flat coastal heathland in northern New South Wales. Bulk organic mulching is a requisite though and *bagasse* (sugar cane waste) does the job in their situation.

It's worth bearing in mind that the avocado is a profuse early bearer — nearly all of our *Hass* variety were bearing at year 2 — and may be treated as a short-term perennial vegetable if you like, especially in adverse conditions of 'pug' soil and doubtful frost. They are, in short, replaceable and a valuable short-term interplant among more suited trees.

We grow 300-400 avocados as interplants between litchis and custard apples and other sub-tropical fruits. With shallow topsoil, less than one metre deep, we fully expect to reduce the number by half as the 'skeleton' orchard grows larger and the avocados fail. Frighteningly, they are full of vigour at year 5, so we may end up with an exotic thicket.

Climate (and micro-climate)

Does anybody near you grow an avocado tree? If the answer is yes, then you're off to a good start.

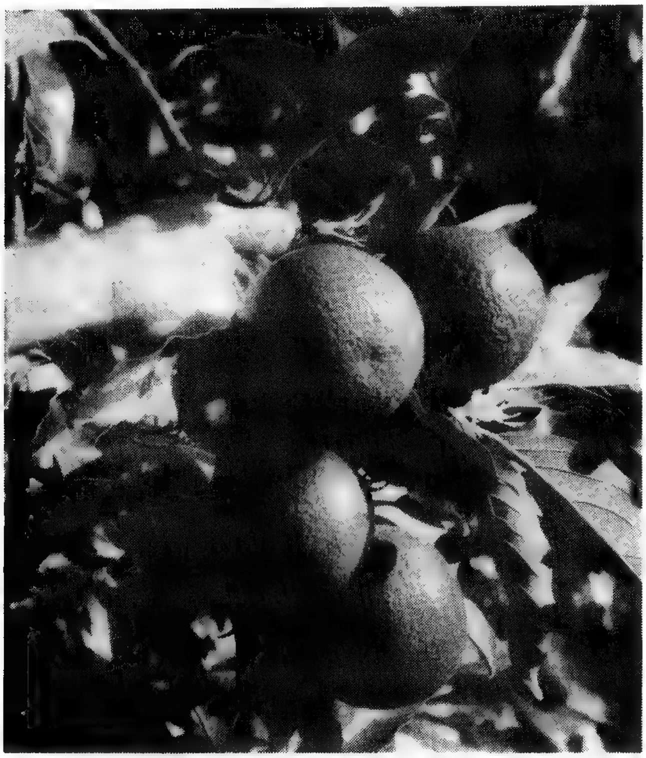
Heavy frost kills avocados, though some varieties are more cold hardy than others. These include *Bacon, Fuerte, Rincon, Zutano, Sharwil,* all of which are Mexican-Guatemalan hybrids.

A Florida horticultural 'fact sheet' states that young Mexican-Guatemalan trees can withstand temperatures to 24°F (that's —4°C), but careful attention to the cold flow of your orchard site and interplanting with windbreaks, humidifying leguminous shrubs and trailers reduces the risk of loss and increases the chance of growth, which should be fairly spectacular from years 2-5 especially.

Barna grass, leptospermums or acacia and eucalyptus stands where suitable all increase the micro-climate by reducing wind and assisting humidity. Melaleuca or grevillea understorey shrub barriers are also fast-growing and effective, but don't reduce the winter sun and give consideration to the extent of searching windbreak plant roots.

Humidifying interplants, nitrogen giving and later removed, include *Leucaena* and pigeon peas, while feijoas, tamarillos and pawpaws can provide a fruit return for many years before being outgrown.

The role of bananas as assistants to oncoming avocados may turn out to be a bit of a myth unless they are spaced well away from the growing trees. While four year old *Zutano* trees here were bearing up to 300 fruits per tree this season two year old trees of the same variety produced only 20 or so fruit each. They are two-thirds the size also, as they wait to outgrow their leafy 'protectors'.



A handful of Reed avocados.

Varieties

Propagation is really a separate topic, somewhat complicated by stock and scion selection and grafting, so the best information is in regard to varieties, many of which are available, 20 or more growing here at Mt Nardi.

The most common and popular avocados, in order of seasonal maturity are:

Jàlna	Thin skinned, early (A)
Bacon	Good flavour, early (B)
Fuerte	Excellent fruit, biennial tendency (B)
Edranol	Mid-season, top flavour (B)
Sharwil	Mid-season, smaller seed (B)
Hazzard	Smaller tree, late maturing (A)
Hass	Late bearer, best flavour (A)
Reed	Large fruit, latest (A)

An (A) marked variety should be mixed with a (B) marked variety wherever possible, to effect better pollination, although a single tree will pollinate itself satisfactorily.

Just by growing the three varieties, *Fuerte, Sharwil* and *Hass,* you may test your insatiable appetite for avocados, by having fruit to eat from April until Christmas in northern NSW.

Avoid growing seedling trees, if *cultivars* are available, as seedling trees bear fruits of varying quantities and quality and can come to bearing at a later age, often 5-6 years after planting.

Advanced seedling trees can be 'worked back' to a variety by grafting and the established root system ensures vigorous top growth afterwards. After grafting a *Reed* top onto a two year old seedling, we were rewarded two years later with 20-30 large fruit.

Planting

Site and variety selected, it's time to plant out, unless the peak of winter is ahead or frosts are still likely. Don't leave your purchased plant, costing $8.00-$12.00, in its black plastic container for too long, because avocados, as previously mentioned, are prone to root damage and overwatering the nursery containers can be fatal.

Dig a reasonable hole, about one metre across and ½ metre deep, but not into the clay pan or shelf material, as this only makes a crater for water to pool in and induce 'avocado terminalis'.

Put in compost, if you have it, a couple of buckets of "dynamic lifter" (concentrated chicken manure), then ½kg of dolomite (calcium-magnesium) if the soil is too acid. Mix all the ingredients well and leave a circular furrow around the tree to collect the initiating bucket of water. Garnish with a thick mulch of lawn clippings, bagasse, very old sawdust or even weed roughage.

A sturdy wooden stake will deflect lawn mowers, soccer balls or bouncing dogs and perhaps save your grafted tree from becoming a seedling again should the scion be knocked off.

A neat trick when planting from the bag, to avoid soil crumbling away from the roots, where roots are unformed, or nursery potting mix is of insufficient composition, is to slice the bottom of the black bag and remove it before placing the tree in the hole. Plant the tree in the hole normally, filling in the sides with soil, then slide the sides of the bag up out of the ground and over the tree, leaving the root system completely undisturbed.

Spacing-growing

Slight variation exists with different varieties, but the general planting distance is 10 metres for backyard trees. Only exceptional trees reach 13 metres in width, or 20 metres in height.

The best bed for an avocado tree is a leguminous (nitrogenous) one, lupins in the winter and cowpeas or *Dolichos lablab* in the summer on the NSW north coast, although there may be more efficient legumes in your area.

Once the trees are established, feed them heaps and they will reward you with equal favour. We feed our trees about 100kg of organic manures each year in the form of poultry 'deep litter', but not before the blossoming time and also in spring and summer applications for obvious reasons. This would be for a tree of about year 3, so adjust for larger trees. You can't really over-manure with organic materials, especially as the avocado in its indigenous state was in a deep bed of rainforest humus soil and decaying matter.

The breakdown of legume material to humus is consequently most beneficial and the application of these humus-providing materials must directly outline why organic growers succeed in this area, while many mono-cropping, chemical-based examples have failed. Since the *Big Scrub,* the original rainforest area, was felled for timber and grazing, there has been a reduction in soil humus from 20 per cent down to 3 per cent — a sad tale.

I can honestly say that we have lost only two trees from 350, because we fed them well and have not played host to the *phytopthora* root pathogen. The trees that died did so directly from water-logging, as they were badly positioned below a small culvert with bananas.

Dolomite at the rate of 1kg per tree per year of age (ie a three year old tree receives 3kg per annum) is also credited with reducing the root disease problem and clay-based acid soils need lime (calcium) anyhow.

Overwatering, as already stressed, is not on, but watering at the time of flower-set is vital if you want your avocado to carry its crop. A naturally dry flowering and fruit-set period can result in the tree shedding all its fruits while just formed, as it lacks the reserves to carry a crop through to maturity.

Pest and disease problems

Anthracnose, a fungal disease, is one of the most damaging problems, although fruit blemishing is not a real problem for the home orchardist, desiring an organic fruit with consequent trademarks of the insect's good choice. Anthracnose spores are active during fruit ripening and cause a local black rot to develop, earlier thin-skinned varieties being most susceptible.

This is no great problem to us, as we simply eat the marked avocados and market the 'eatable' ones.

Fruit spotting bugs sting the fruits causing hard lumps under the skin, leaf defoliating *Monolepta* beetles may swarm and munch, fruit fly can be a problem, but not generally. All these are surely better to live with than recourse to the chemical 'heavies'.

H. F. Macmillan, in *Handbook of Tropical Gardening* (1914) refers to another 'pest' when he writes of his experiences in Ceylon (Sri Lanka). "...Unlike other pests their depredations are not confined to edible products, but include anything moveable" and goes on to say "Dried coconut leaves tied around the trees give a loud rustling noise if a person attempts to climb the trees." All I can say is, who would know more about thieving than our 'colonialist' forebears?

Well, if you do get to the stage where those incredible green fruits are ready to pick and they ripen up with all the characteristic buttery texture, then here are some recipes to begin with, although the possibilities are unlimited.

We have a half scoop of avocado on nearly every meal, be it vegetables, salad or just plain avocado. Last winter the kids didn't have a runny nose between them, presumably assisted by the balanced mineral and vitamin the avocado provides to the diet.

Enjoy your avocado trees and their fruit. Good luck.

recipes

By Beanie

GUACAMOLE

(A traditional Mexican appetiser)

avocado
lemon juice
salt, pepper
garlic

Mash avocado and season with salt, pepper, lemon juice and garlic to taste.

Other possible ingredients are minced green peppers, minced onion or finely chopped tomato. Serve as a dip with corn chips, or add to *tacos* with beans and salad.

AVOCADO DEVILLED EGGS

hard boiled eggs
avocado
salt and pepper
seasonings (garlic, dry mustard etc)

Cut the eggs in half lengthwise and remove yolks. Mash the yolks with the avocado. Season to taste. Mound the mixture back into the egg whites.

AVOCADO DIPS

1. Avocado and sour cream

2 ripe avocados
½ cup sour cream
2 shallots, chopped
salt, pepper

Mash avocados and sour cream. Season to taste and add shallots.

2. Avocado with cream cheese and chervil

4 avocados
6oz cream cheese (softened)
½ cup lemon juice
1 teaspoon salt
½ teaspoon chervil leaves
½ teaspoon onion or garlic powder
¼ teaspoon tabasco

Mash avocados and cream cheese until a fairly smooth puree. Season, cover and chill.

Serve either dip with crackers or corn chips.

CREAM OF AVOCADO SOUP (CHILLED)

3 avocados
1½ cups stock
1½ cups light cream
2 teaspoons lemon juice
crushed garlic (2 cloves) or garlic powder
pepper, salt

Puree avocaros with soup stock, combine with seasoning. Chill thoroughly. Stir in lemon juice and garnish, which might include: lemon or lime or orange grated, or in slices, fans or wedges; minted whipped cream or sour cream; fresh mint or dill sprays; plain or garlic croutons.

This makes 6-8 servings. Chilli powder or tabasco may be added for a more spicy soup.

UNA ENSALADA POCO

(A little salad — Mexican)

2 avocados sliced
1 small head each lettuce and chicory (torn)
1 cup watercress
sliced shallots
1 large tomato (diced)
½ cup crumbled Roquefort cheese
2 hard boiled eggs (quartered)
special dressing

All ingredients in this salad should be chopped fine. Toss greens, arrange avocado slices on top and garnish with cheese, egg and tomato.

Special dressing (makes about two cups)

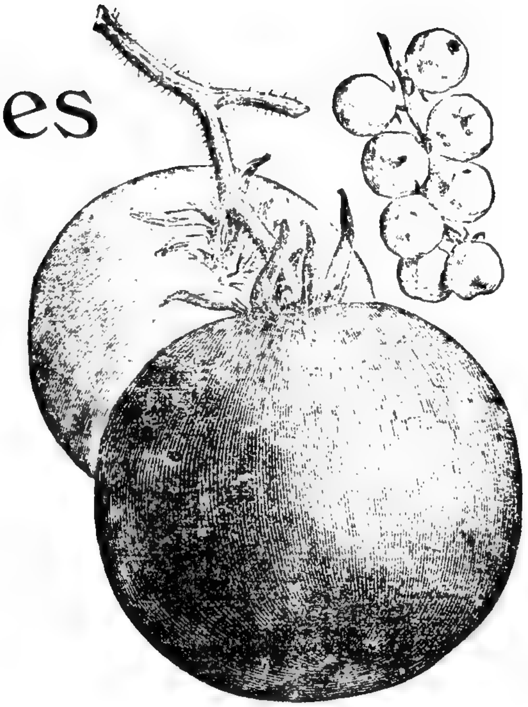
Combine 1 cup salad oil, then ½ cup each olive oil and wine vinegar, 2 tablespoons lemon juice, 1 large clove garlic (crushed), ¾ teaspoon dry mustard, 1½ teaspoons Worcestershire sauce, salt and pepper. Beat until blended and chill.

Growing avocados in South Australia

Ian Bond, Department of Agriculture, South Australia, Bulletin No 3, 1982 (revised), leaflet, 12 pages, illustrated. Price $2.00 plus 40c postage from GPO Box 1671, Adelaide, SA 5001.

Just right for South Aussies, with all the facts and cautions on soil deficiency and salt sensitivity problems.

Tasty tomatoes



The best way to eat a tomato is raw, off the bush in your garden — juicy and they're delicious! They're also nice cooked, juiced, bottled or pickled.

There's something about tomatoes, their green leaves, their red fruit, their delicate taste, that makes them loved all round the world.

In Australia we have the sun, the soil and sometimes enough water to grow our own backyard tomatoes to perfection, often when they are the most expensive at the greengrocer or in the supermarket.

We are always working towards that happy Christmas time glut of tomatoes that *Earth Garden* readers complain about, but we've *never* had enough tomatoes — and usually when they are in over-supply! This is when you should try to buy some cheaply for bottling.

Here are some ideas for eating tomatoes and for preserving them if you *do* happen to have more than you can eat.

BOTTLING TOMATOES

Most home garden tomatoes, with their natural fruit acid, may be safely bottled. However, some of the new hybrid types, perfected for their long shelf life, have a low fruit acid content. Avoid bottling them (or don't buy them in the first place).

Pick out firm, young tomatoes, just table ripe. They don't need blanching. Peel them if you like, otherwise prick the skins to stop them bursting.

Whole tomatoes: Pack tomatoes tightly into sterilised bottles. Fill to the brim with brine made by adding one teaspoon of salt to one pint of boiling water. Screw the tops on the jars and partly seal them, then immerse the jars in very hot water and boil for 50 minutes (pint or quart jars) or 75 minutes (two quart jars). Remove and seal immediately. *Roma* is a good bottler.

Half tomatoes (or solid pack): More tomatoes may be packed into the bottles this way. You may also use the good parts of poor quality tomatoes by cutting off spots and bruises. Skin the tomatoes, cut them in halves and pack closely together in layers.

Sprinkle on just a little salt over each layer (at one-third, two-thirds and completely full). Squeeze down the tomatoes so they are covered in juice and to make sure air bubbles are removed. Sterilise to 190°F for 20 minutes, then seal. Use for tomato soups. Store all jars in a cool, dry place.

TOMATO JUICE

Remove spots and blemishes from firm, ripe tomatoes, cut into pieces and crush. Simmer until soft. Don't boil. Press through a sieve or food mill or use a blender. If required, season with one teaspoon of salt and one teaspoon of sugar to each litre (quart) of juice.

To bottle: Reheat to boiling and fill sterilised preserving jars to within ¼ inch of the top. Stand in boiling water bath for 15 minutes. Remove jars, seal and store.

To freeze: Pack into sterilised jars, seal, cool and freeze, or make the juice into ice cubes, pack them in plastic bags and freeze.

GAZPACHO

(Cold Spanish soup)

4-5 ripe red tomatoes
1 cucumber, peeled
1 small onion
½ capsicum, cored and seeded
1-2 cloves garlic
juice of ½ lemon
salt, ground pepper
1 tablespoon vegetable oil

Dice the vegetables and mash, sieve or grind them together, or put into a blender. When smooth add the oil, juice and season — it should be a bit peppery. If the soup is too thick, thin with cold water. A little beetroot juice may be added to improve the colour. Serve chilled.

COLD TOMATO SOUP

Mash, grind, sieve or blend tomatoes. Then add yoghurt, salt, pepper, chopped parsley and a little chopped basil or coriander. That's it!

TOMATO SOUP

1kg nice tomatoes
(or equivalent bottled or pureed tomatoes)
1 teaspoon salt
pinch sugar
2 tablespoons butter
1 tablespoon flour
½ litre milk

Chop tomatoes and put them into a heavy bottomed pot with salt and sugar. Cook gently, with the lid on until soft enough to mash, sieve or blend (or use preserved tomatoes).

Melt butter and add sieved tomatoes. Stir in flour and cook slowly, stirring for about two minutes. Gently add milk, still stirring, until soup is hot. Don't boil. Season to taste.

Another method (without milk): Replace milk with soup stock and add two tablespoons of rice. Otherwise proceed as above. Bring to the boil and simmer gently until rice is tender, about 20 minutes.

PEELING TOMATOES

If you need to remove tomato skins for cooking or bottling, this is the time-honoured, quick way:

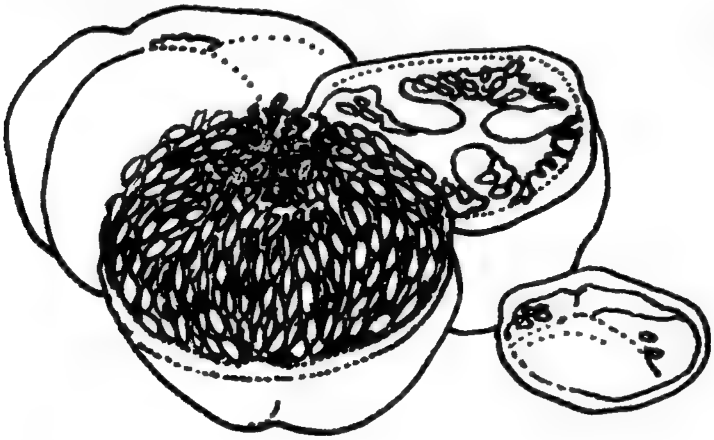
Dip tomatoes into boiling water for half a minute, then plunge them straight into cold water. This loosens the skins, which peel off easily.

GREEK STYLE TOMATO SALAD

2-3 fresh firm red tomatoes
1 teaspoon white vinegar
1 tablespoon olive oil
pinch salt
chopped basil, etc

This is best prepared just before serving, using chilled tomatoes in summer. Cut tomatoes into thin slices and arrange on an oval plate. Dress with vinegar, oil and salt, then sprinkle over either freshly chopped basil *(the* tomato herb), mint, coriander or oregano. Add sliced raw onions if you like. This is marvellous eaten with fresh bread, *fetta* cheese and olives.

The French have a similar dish, but the tomatoes are first skinned and sprinkled with sugar before the dressing is added (omit the salt).



RAW STUFFED TOMATOES

Cut the tomatoes in halves. Scoop out the pulp and pips with a teaspoon. There are plenty of delicious mixtures to fill the tomatoes. Try mayonnaise and cut up boiled eggs, garnished with chopped fresh parsley or other herbs; cottage cheese or cream cheese mixed with chopped herbs or tuna mixed with mayonnaise.

Provencal stuffing: Draw out the moisture in the tomato halves by sprinkling with salt and turning them upside down to allow liquid to drain out. Fill with a mixture of parsley pounded with two cloves of garlic. Serve after an hour, when the flavour is through the tomatoes.

Avocado stuffing: Peel and cut tops off firm tomatoes and scrape out the pulp and pips. Peel and mash avocado with lemon juice, tomato pulp (if wanted) and finely chopped parsley and coriander. Stuff the empty tomatoes.

With big tomatoes, bake an egg in the middle if you like. Garnish top with grated cheese and breadcrumbs for a change.

TOMATO SAUCE

Very ripe (or even over-ripe) tomatoes are needed to make tomato sauce.

(a) 1kg ripe tomatoes
2oz butter
pinch sugar and salt
little lemon juice
glass of white wine, stock, or water

Skin and roughly chop up the tomatoes. Melt the butter, put in the tomatoes and cook over high heat for 2-3 minutes.

Gradually add the liquid, sugar and salt, reduce heat and simmer gently until the tomatoes are nearly reduced to pulp. Cool and stir in lemon juice. It isn't necessary to strain.

(b) Simmer chopped up ripe tomatoes in 2-3 tablespoons stock with chopped sage or thyme and a little salt for 20-30 minutes. Stir in a little flour and boil until the mixture begins to thicken. Strain if desired.

(c) Tomatoes only. Chop up tomatoes, season with salt, pepper, a pinch of sugar and a pinch of paprika. Simmer very gently with the lid on saucepan for about an hour.

LETSCHO

(Spicy Hungarian sauce)

Chop up tomatoes, onions and green peppers (capsicums). Fry gently in a little oil with salt, pepper and paprika (or cayenne pepper) until capsicum is soft. Serve with anything from scrambled eggs to steak, or on toast.

BAKED STUFFED TOMATOES

A simple dish which children love. Don't peel the tomatoes, or they will collapse when cooked. Cut a slice off the top of each tomato and remove pulp to add to the stuffing. This might be chopped up bacon, fried with onions; minced meat with chopped parsley or other herbs or grated cheese; or cooked rice with a few pine nuts or sultanas added. Mix, stuff tomatoes and replace the lid, then bake on a buttered dish for 20-25 minutes at 190°C (375°F).

SUNFLOWER GREENS

To all those people who don't have land to grow their own vegetables, sunflower greens and sprouting of seeds must be the answer both economically and nutritionally.

Packets of sunflower seeds, sold as parrot seed in supermarkets, are suitable to grow. Plant them in trays or boxes with holes in the bottom, preferably with manure or compost added to the soil.

After keeping them watered for 7-10 days, the greens should have their first two leaves and are ready to be cut. Using scissors, cut them close to the soil, wash well and they will keep quite well in the fridge in a glass jar. One of the tastiest greens around!

Alfalfa and mung beans sprouted are always a crisp, fresh addition to a meal and the cost of these nutritious greens is small.

See: *All about sprouts and Indoor tray gardens* in Earth Garden 31 and *The Essential Earth Garden.*

Jenny Coebergh,
Woombye, Queensland.

FOOD PLANTS

MULGA AND KURRAJONGS

My kurrajongs pulled me through our part of the drought, which lasted about four months. They helped a lot of 'cockies' in this area, just as mulga has saved thousands of stock around Bollon in Queensland, where my brother lives. After four years of drought and pushing scrub, I think the people in western Queensland must be the most tenacious and remarkable individuals to survive it.

The mulga and the kurrajong? Yes, they are more valuable than politicians, scientists and handouts. We lop the kurrajongs so they reshoot and the mulga regrows after a few years (perhaps in a different paddock), usually after heavy rains.

Dirk McGown,
Warrumbungle, NSW.

PAWPAW TREES

When planting out pawpaw trees, make sure to place them on a slight mound of earth so that as the trees grow, the top roots will be partly exposed. This way the trees are protected from collar rot. I have a lot of young pawpaw trees growing and we are eating the fruit all year round, winter and summer.

Maybelle Jocumsen,
Currumbin Valley, Queensland.

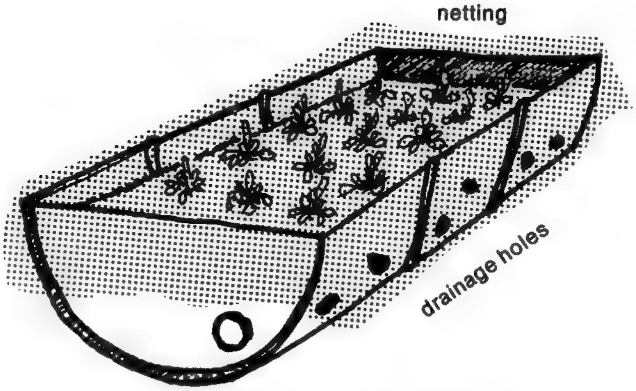
Tommy Atkins mangoes.

Tropical Tree Crops

Production on the NSW North Coast

G. J. Tankard, 1983, paperback, 32 pages, colour photos. Price $4.95 posted from 11 Third Avenue, Bonny Hills, NSW 2446.

A good introduction to tropical tree crops for both home orchards and commercial scale growing, especially suited to the NSW north coast. It covers site selection and preparation with notes on avocado, macadamia nuts, lychee, custard apple, pawpaw, mango, guava and feijoa. Glenn Tankard is an agricultural science graduate.



44-gallon drum nursery for cuttings.

TREE CUTTINGS

I read with interest of the method of planting figs used by Tony Vlatko (see *Planting Figs,* Earth Garden 33). I agree that an upright single cutting would not give the best root system, although it is an accepted practice in softer climes to plant your cutting vertically, with about ½ inch in and ½ inch out of the ground.

The method we use for all cuttings, passed on by my orchardist father, gives much better results in our sometimes extreme climate in the Darling Downs.

Take your average cutting — grape, fig, mulberry — which is taken in winter while the plant is without leaves. It should be about 12 to 15 ins long, with four or five eyes on it. Just leave one eye, no more than an inch out of the ground and plant on a slant so that the bottom of the cutting is about 6 ins deep.

This gives a minimum area of exposure to heat and drying wind and a maximum amount of cutting at the 3-6 inch level in the soil, where the best root development seems to take place.

My favourite nursery is half a 44 gallon drum, cut lengthwise (an old rusty, holey one will do), placed under the shady side of a shrub with a row of cuttings along the edge with their noses just poking into the sun. Fill the drum with a suitable sandy scrub soil mix and cover it with netting to keep out dogs, cats and chooks.

This I find is economical on water and gives a good percentage of strikes. It is also a safeguard against drowning in over-wet conditions.

Turn out the whole drum and gently separate the plants some time before spring, when it is time to plant out. You often have to dig rather large holes so the roots may be spread out. In our black soil, they must be in well built-up mounds to aid drainage and mulched against the dry times.

We are also trying a few more tropical trees. The best places seem to be sheltered, alongside a tank of water on the north of a building.

To our surprise the citrus stood up to last summer's flooding better than the stone fruit, despite our efforts at trying to keep up with their trace element needs. This black soil has rather too much lime for easy gardening.

I wonder how many types of figs there are? I know of at least eight.

Does anybody know a really effective way of coping with fruit fly with ingredients that are easy to get? At the moment a lot of our trees are wrapped up like sore toes with paper bags to protect them from the frost.

Good gardening, Max and Doris Roddan, MS 902, Dalby, Qld 4405.

Bread happiness

Dear Keith,

Thanks for sharing your bread happiness in *Back to basic bread,* EG38 (page 16). Perhaps *Earth Garden* readers would also like to share some of my experiences?

1. Don't despair if you have failures at first. If the family won't eat them, the chooks will, eagerly.

2. *Rolls* are easier to make than loaves. Mine take 20 mins in the top of the oven at 350°F (180°C). Make them in the shapes of letters or numbers for special 'birthday bread', for example — JACK 10. Kids think that's wonderful.

3. Once you're confident about being able to make a good loaf every time, then you can start adding things like:

Herbs: Just before you shape the rolls or loaves. Use lots of whatever herbs you like. The perfume is heavenly!

Grated citrus rind: Half a fruit peel per loaf. Whatever kind of citrus you've got will do.

Non-fat skim milk powder: I throw about a dessertspoonful in with the flour to boost the bread's protein content.

Soya flour: Two teaspoons per loaf; also a protein booster.

Fruit bread: The only limit is your imagination. Why not use dried pears, dates, pineapple? Vary the fruit and spices in a standard recipe as you fancy. One particularly delicious batch I made contained a tablespoon of runny cumquat marmalade and a generous teaspoon of ginger.

4. Last, but not least, active dry yeast is cheaper in 'bulk' from your health food shop. Keep it in a little screwtop jar inside the door of the refrigerator and you won't have to throw away all that wasteful packaging.

Jill Hooke,
Horsham, Victoria.

HOME GROWN YEAST

Dear Keith & Irene,

I'm in the middle of *Back to basic bread* and am writing to ask if anyone knows how people 100 years ago made or obtained their yeast? Even my grandmother says she got hers from a shop as she needed it. I would love to find out.

Cheryl Robinson, Maryborough, Queensland.

Dear Cheryl,

Even in the very, very old days, as far back as Egypt and Babylon, bread leavening was associated with beer brewing. Ale and beer yeasts were used by cottagers, who made their own liquor, until the 19th century. Yeast or 'wort' was made from grains, potatoes, hops, malt, sugar and flour.

People could also obtain yeast from the brewery or sometimes from the local baker. After about 1850 'German' compressed yeast was developed and sold in grocery shops. The modern compressed and dry powdered yeasts are more reliable than these 'wild' types.

Another leavening agent is sourdough, used by pioneers in Alaska, Canada and Australia, which was often saved for years in the form of dough in a pot. A way of making this, using commercial yeast, was explained by Janet Throop in *Sourdough (Earth Garden 8,* page 55 and *The First EG Book)* and we also gave a potato 'starter' in that issue with starters based on brown sugar and peas in *EG9* (page 51).

Here are three other methods for making home-grown yeast.

POTATO YEAST STARTER

This yeast starter recipe was given to me by an elderly English lady in Western Australia, whose memories of London were pre-automobile. As penniless migrants, she and her husband contrived most of their furniture and dishes from kerosene tins and their curtains, bed covers and clothes from flour sacks. All their cooking was done in a camp oven.

This is the recipe exactly as she told it:

Wash one medium potato. Cut into four. Do not peel. Cook in a small saucepan with 1 tablespoon hops. Pour off water and save.

Mash potato and hops with 1 tablespoon sugar and 1 tablespoon flour. Mix with the saved potato water. Put into a glass bottle with 2 raisins. Cork. Leave in a warm place.

When using, save some of the liquid yeast to start the next batch of culture.

PS. I haven't tried this recipe, but in an old copy of the *Presbyterian Cookery Book,* I found a very similar one. The recipe stressed the main difficulty of getting a well seasoned bottle and said: "It is a good plan to brew yeast in small quantities several times in the same bottle, leaving a little of the old brew in each time."

The same book also gave two other recipes, which someone might like to try.

LEMON YEAST

Use a seasoned bottle. Mix well together the juice of one large lemon, 3 tablespoons moist sugar, and 1 pint of boiling water; bottle while warm.

CREAM OF TARTAR YEAST

One tablespoon each of cream of tartar, sugar and flour, mix into a smooth paste with a little warm water, add 2 cups of warm water, bottle in morning and it will be ready for use at midday. Sufficient for 10 tin loaves of bread.

Stella M. White,
Malanda, Queensland.

GLUTEN IN BREAD

The all-purpose white flour sold in supermarkets and grocery stores in Australia needs an addition of gluten to make good bread. This is because it is primarily intended to be used in cakes. You can buy gluten flour in many health shops. Add it to white flour at 1 teaspoon per ½kg loaf.

Wholemeal bread has enough gluten content for making bread in our experience. Mixing different grains with white flour, such as millet, also contributes gluten to stretch the bread dough.

SERENDIPITY BREAD

By Heather Chamberlain

I don't know how economical this is, except that it's generally cheaper to bake your own. Thanks are due to my Dad, Doug Wale, who let me grind some wheat on his *Samap* mill and cook as I felt inclined when visiting him recently. Come to think of it, he taught me to make bread originally, after I'd failed at it!

Use a basic yeast bread recipe *with egg(s),* skim milk powder, and a bit of sugar added, also wheatgerm or bran etc, as you feel inclined — that's why I call it *Serendipity* Bread.

After the first rising, these are some of the possibilities:

1. Pat out the dough, flattish and square or oblong, about ½ inch thick.
   Spread it with softened butter.
   Sprinkle with sugar to taste.
2. Now choose a topping (which will turn into a filling) of:
   (a) orange or lemon juice, a little grated rind and candied citrus peel from the shop;
   (b) sultanas and currants and cinnamon;
   (c) dried fruit and whatever nuts or seeds you fancy (not too many).

Any other variation on these, or what you have available.

3. Now roll it up. When rolled you can:
   (a) Leave it as it is — a fruit roll;
   (b) make it into a ring and slash it 4-6 times — a fruit ring;
   (c) cut it into slices about ½ inch thick, lay them, touching, on the baking tin (fruit or 'Swiss' rolls).
4. Let it rise the second time and bake it. You can glaze it if you wish (I don't usually bother).

Family Serendipity Bread

Another variation: Let everyone have their own piece of dough to make whatever they choose of these suggestions, or just make plain buns. My daughter, Christina, likes these (they're better than playdough!).

We have a family saying: *Illiterate peasants have been making bread for thousands of years.*

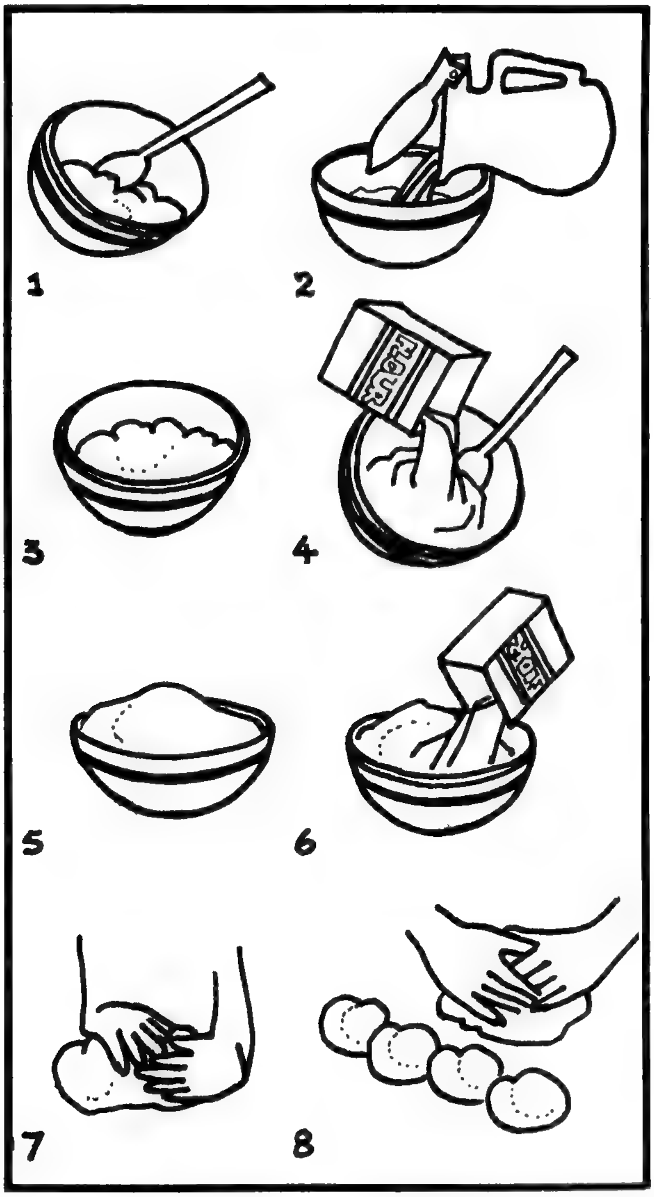
SALT IN BREAD

Shirley O'Donnell of Turill, NSW, wrote to say that "basic bread has only three ingredients — and they *don't* include salt."

Salt may certainly be left out if you prefer, or if you are on a salt-free diet. Salt in the bread dough does have a practical use. It controls the rate of yeast fermentation and helps the gluten work, though it won't affect the dough rising if you leave salt out.

For me it's entirely a matter of flavour. We don't usually add salt to our food and the amount used in basic bread (1 teaspoon) is less than in most other bread recipes. Of course, it's best to use table salt, rock salt or sea salt.

— Keith.



"NEXT STEP" BREAD

Here's a simple way of making bread, illustrated step-by-step by our artist Elaine Norling, who got the recipe from her friend Sondi Stankov. It's a natural follow on to our "basic bread" recipe in *Earth Garden 38* and requires little kneading (only one minute) or effort.

1. Mix yeast, either dried or "live", with honey or sugar — 1 teaspoon of yeast to 1 dessertspoon honey.
2. Add 1 pint warm water.
3. Await evidence of yeast being alive (small gassy bubbles).
4. Add sufficient flour to make a batter. Beat with wooden spoon for 1 minute
5. Let mix stand until it doubles in size (½ hour).
6. Add more flour till it has a dough consistency.
7. Knead for 1 minute, adding flour if mix is too sticky.
8. Form into bread or roll shapes.
9. Wait until dough has doubled in size.
10. Bake.
11. Eat!

earth people write

Dear Irene & Keith,

We have been reading **Earth Garden** for a couple of years and commend you on your job, an informative mag to read on cold rainy winter weekends. Our dreams aside, I feel that the momentum of concerned people moving back to the land as new settlers has been boosted by our Prime Minister's statements about self-reliant groups.

At last people high in the established community may now see the contribution that self-reliant groups could make towards modern employment philosophy and not just brand them as "hobby farmers".

All the best to other earth gardeners out there who are making the whole thing go. Good luck to those who are doing the actual digging!

God bless you all, Philip & Meredith Smith, Orbost, Victoria.

Dear Philip & Meredith — We hope to have something more concrete on the government's plans regarding communities and job creation in Earth Garden 40. Meanwhile, see the article by Bill Metcalf on research into alternative lifestyles in this issue.

Dear Keith & Irene,

So another year has passed by and it's sub time again. Judging by Melissa's appetite, you'll need all those subscriptions in quickly! She certainly is growing up into a fine young lady.

I'm glad to see that Keith has discovered the joy of breadmaking. Ah! that such simple and basic tasks can provide so much joy. Like the potter, each time the oven is opened, there is the thrill of the newly finished product.

A paragraph or short article on the flours available for breadmaking may be interesting to bread bakers. Under our 'health' laws, wholemeal flour, for instance, is less than wholemeal, and the components missing are important, if not vital ones. Also our white flour is a nutritional disaster, which needs to be pointed out frequently. Perhaps, if you haven't done it before, you could research the subject and publish the results?

Peace, Love & Harmony, Rob Thomson, Thangool, Queensland.

Dear Rob — See the note on gluten in flour in this issue. We will try to follow up your remarks about whether or not wholemeal flour is "whole". — *Irene & Keith.*

Dear Irene & Keith,

Can anyone advise us on the effects of bad bushfires on the occupants of various types of houses? We have some forest land at Fairyland, near Chinchilla, Queensland and we wonder if an underground house, plus overground house is a good idea. I expect an underground house may be made to let in sunlight and warmth and offer exceptional security in time of a bushfire holocaust. We'd like to know if there are any recent underground homes in Victoria, NSW or Queensland which we could visit in future, with permission of course.

Yours sincerely, Kenneth & Helena Apted, 5A Claremont Avenue, Newtown, Geelong, Victoria, 3220.

Dear Earth Gardeners,

We also, like so many others, have our plot of land. We have a problem that some other readers may be able to assist us with. We want to build a passive solar home and have read many books on the subject, but can't decide between an underground home and /or one similar to the Highett test home in Victoria.

We wondered if anyone who has built either type of home could share any problems or suggestions for improvements, with us. Mudbricks aren't practical for us.

We'd also like to incorporate a cellar. We've read the article **Build a storage cellar in Earth Garden 19** (page 80), but need to know more.

Also, could anyone in the Brisbane-Gold Coast area suggest an architect or planner to draw plans? We've written to several places with no result.

Sincerely, Anne Stille, 384 Cotlew Street, Southport, Qld 4215.

Dear friends — Dr Robert Rich writes about the bushfire defensive house in this issue. On underground houses in general and their protection from fire, see our review of *An Introduction to Earth-Covered Housing* in this issue. — *Irene & Keith.*

Dear Keith & Irene,

I have about 10 acres near Broome in Western Australia and am hopeful of developing along the lines of Earth Garden's many supporters. Tropical fruits and grapefruit seem to be the thing to try here, but am trying any and everything; just about any variety of herb and vegetable also.

Should any EG readers pass this way, please accept this as an open invitation to call in. If there's no room in the house, there's big mobs of area to pitch the tent or park the caravan.

I would also be interested in a share-farmer becoming involved as it is necessary for me to go away occasionally to earn the humble dollar to keep the place going till I think it's a liveable proposition. A young or older couple is envisaged, children no restriction, or a widow with children. But, definitely, no drugs.

No capital is required and a lifetime of the EG kind of lifestyle is available to the right kind of people with partnership in the long-range view. There's ample water and all required tools and small machinery on hand, 500 odd mixed trees at varying stages, vegie gardens, chooks lay 2-3 dozen eggs a week — all that is needed is the honest, willing hands.

I am in my early 50s, single (may or may not remain so) and would like to encourage somebody who is willing but lacking the land and money to make a start. The land is freehold. Hope to hear from interested parties, suggest you try to come for a few weeks' look-see, but please write first.

Yours for happy living, Dave Russell, PO Box 303, Broome, WA 6725.

Dear Irene & Keith,

We are trying to be partly self-sufficient — so far the cows produce all our milk and most of our butter — but seem only to feed the caterpillars on the leafy vegetables!

We like yoghurt and have found if we buy a pot of plain yoghurt, we can make at least a dozen more batches before it won't set properly. We simply save 100-200ml of the old batch and add it to 1-1¼ litres of fresh, scalded milk and get cheap yoghurt. We seem to make one batch every week, so our initial cost is lessened.

One practical trick Bob used for baling hay when we collected the grass from nearby large 'parks'. Cut the top and bottom out of a 44 gallon drum. Put in the baling twine and clip it to the top so the hay is easy to tie up. Then load in the hay, jump on it and press it down tightly, then tie it up. When you lift off the drum, you have a round bale of hay which is easily stored and soon flattens (so it doesn't roll).

Thanks for all your work making a beaut magazine, Ann Colyer, 17 Mile Rocks, Queensland.

Changing lifestyles

By Miriam Zolin

Some years ago — at the end of 1976 to be exact — my parents made a drastic change to their lifestyle. They 'went bush', taking my brother and I with them. I was 12 and my brother was 10.

Mum and Dad had high hopes and big dreams. Many people called them brave. And truly, they were being more than a little foolhardy. Not only were they taking their own futures into their own hands, they also had a responsibility to two children.

My brother and I were about to go through that stage when our characters would be set, and to some extent created. There was no way Mum and Dad could predict the effect their change of lifestyle would bring — to any of us. That was where the foolhardiness came in.

In the relevant magazines you've read hopeful articles about how new settlers hope their life will be. You've read happy articles about how well it's turning out — and disillusioned articles about the reasons the bubble burst. Now perhaps you'd like to read about what happens when a 12-year-old is plucked from a normal upper-middle class city life and placed in the simplified, satisfying life of a homesteader? Perhaps you'd like to hear about what happens when she leaves the nest to once again enter the big, wide and complicated world that most people inhabit?

Now I'm 19. I left the nest a year ago, just after I turned 18. At first, things that people normally take for granted terrified me. In six years I had become well and truly countrified. When we had first moved to our bush block, I didn't like it. The isolation, the hard work, the lack of luxuries really got me down. Gradually, though, I accepted it and learned to love it.

The hard work

Working hard is something I now do without hesitation, whatever my employment. There is a need, in a self-sufficient lifestyle, for everyone to pull their own weight — women and children too! If you don't, you can bring your whole enterprise around the ears of your family, or whoever else you're living with.

So as children and young adults, we learned a very important lesson. We learned to be conscientious. That lesson may not have been learned so well in any other environment, and it will stand me in good stead for the rest of my life.

Lack of luxuries

Funnily enough, there were few of the so-called luxuries that I really missed. I did miss pretty clothes, though. The lifestyle we had demanded for practicality's sake that we wear jeans, work shirts and heavy workboots. The lack of any feminine frills did nothing for my dress sense. Soon after I left home, I went clothes crazy, and it took me quite a while to settle down to normal.

We didn't miss television at all — we had the radio and books from our friendly bookmobile library.

Going back to basics is not necessarily a significant change to a 12-year-old. When there's no choice involved, accepting the inevitable comes naturally to not-yet-adolescent children.

Isolation

This really was a worry and I think it affected me permanently. Both my brother and I had been 'loners' at school. Somehow, though, choosing not to mix is quite different to having it thrust upon you. The isolation worried me more than it did my brother. It's interesting to note that generally speaking it's the females in a homesteading situation who complain about the isolation. I don't know why, but the loneliness seems to affect us more than them.

In our particular situation, we had virtually no social contact with people our own age for five years. This had a number of important effects after I left home:

1. Meeting and talking to people was very traumatic. I came out in cold sweats, I stuttered, got the shakes and blushed — a rather extreme reaction to perfectly normal situations!

2. I had no tact when dealing with other people. My lack of sensitivity was, I think, a direct result of my isolation for the previous years. I alienated many people in those first few months. I did a lot of hurting that would not have been necessary if my life had not been so very cut off from the rest of humanity.

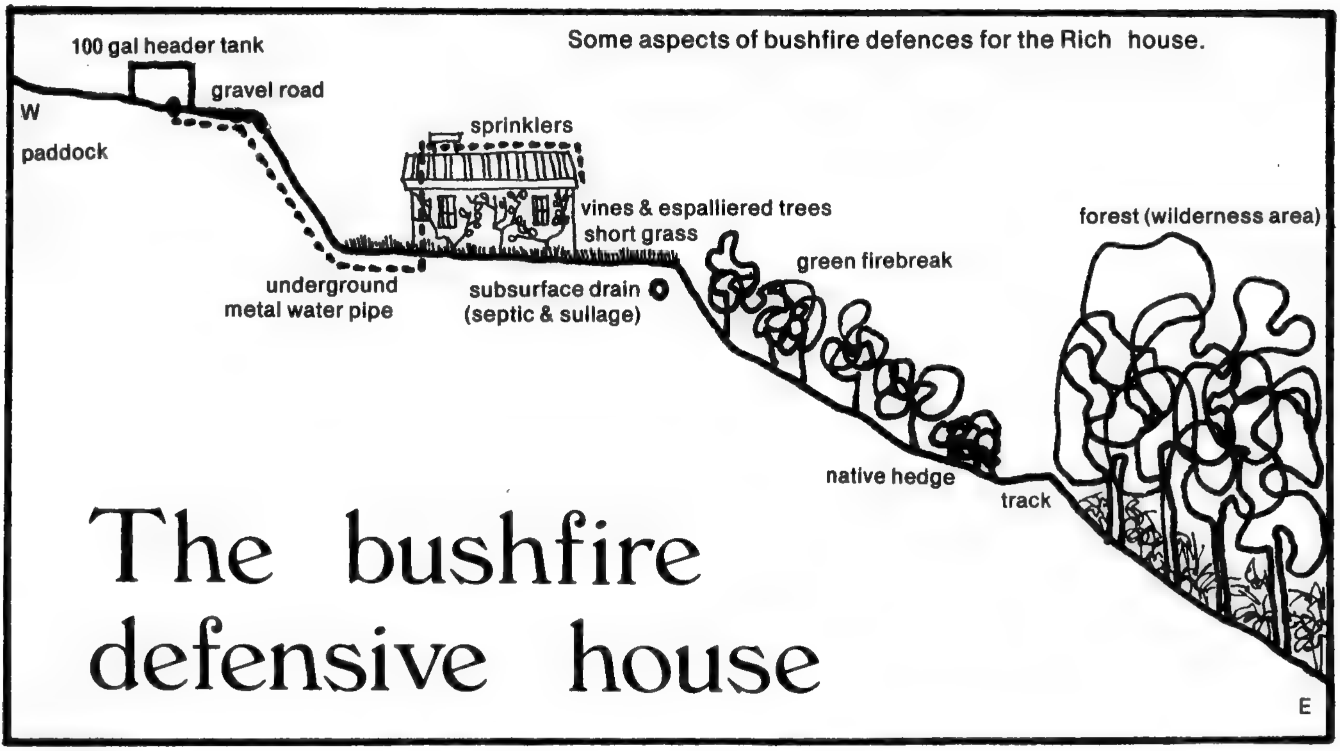
As far as I am concerned, those years as a homesteader's daughter are important. Learning to be self-sufficient is not a physical lesson. It is more the developing of an attitude that makes you independent. It's an experience that matures you.

Most importantly, I learned at 12, and again at 18, to adapt to a new way of life. As I see it, adaptability is a very important key to survival.

A WARNING

Please don't subject your kids to the trauma of complete isolation. It's not fair on them when they have to make their own lives later. It will only give them a bad start. Naivete has no place in the modern world, outside of a completely protected environment.

The bushfire defensive house


Some aspects of bushfire defences for the Rich house.

Bob Rich tells us he wrote this well thought-out article during "smokos" while working on the building of the Marysville Primary School. It's based on ideas he's had for years and a fair bit of knowledge gained while working for the CSIRO.

The story was well typed on a borrowed machine at the school, but the "Clancy" touch was added by a clay coloured muddy thumb print at the back of the final page.

By Dr Robert Rich

Last summer's bushfires have made many people aware of the dangers of living in or near the bush. So it is good to know that it is possible to build a house so that it has a good chance of surviving any bushfire.

Over the years a lot of knowledge has accumulated about bushfire safety and studies already published since the 1983 bushfires have added to this.

Before talking more about bushfires, I'd like to make this point: *If you don't want any risk from bushfires, don't live in the bush.* A great many people move out of the suburbs into forested areas, because they find the location pretty. Then they cut a great swathe through the forest, destroying its beauty, because of fire danger or because it "blocks the view".

One man bought a 10 acre block near where I live and cut down nearly two acres of trees — because he's afraid of snakes!

The first way to protect your house from bushfire is to build it in a location that has a relatively low probability of getting the full force of a racing fire. Every location has a prevalent wind direction in the summer. For example, at Moora Moora, westerly winds are the most usual in summer, but on very hot days the wind tends to blow from the north.

Also, fire tends to spread *up* a slope. So I'd be reluctant to build a house on a slope facing north or west. My house site is near an easterly slope, so that in the event of a fire, the wind and the slope are likely to counteract each other.

Nevertheless, *there is no such thing as a safe location.* One group of houses in Cockatoo were burnt out by the firestorm which came over a ridge and raced downhill, from the south west (the usual fire direction being north east).

The most important consideration in examining a locality is whether there is inflammable vegetation nearby.

Grassland (with standing crops) is very inflammable in summer. A grass fire is very dangerous, but it is relatively easy to stop it from spreading to your house. You need two lines of defence. The first is a positive firebreak: a strip of ploughed land, a road, or even a footpath with dug-over garden beds on each side. The second line of defence is lush, green, well-watered vegetation close to your house (more on this later).

Forest or scrub near your house is more difficult to deal with. Burning forest endangers a house in two ways — through firebrands and through radiant heat.

Firebrands

Even a small bushfire raises a lot of burning leaves, bark and twigs into the air. A major fire will throw up burning branches of considerable weight which can break roof tiles.

Dangerous fires tend to occur on windy days and if the fire is fierce enough it creates its own wind and becomes a *firestorm.* The wind scatters firebrands ahead of the bushfire, especially across open space.

Hedges, isolated trees and bushes act as protection by trapping such burning debris, provided they are not themselves highly inflammable. Most species which lack inflammable oils will smoulder rather than burst into flame if they are well watered.

Some species of plants are known to be fire-resistant, for example boobialla and Cootamundra wattle. However, I have seen two near-neighbouring houses after a fire. One had been surrounded by Cootamundra wattle and had burnt down. The other was surrounded by pines (highly inflammable trees) which had been killed by the fire, but the house was still standing!

Get advice on fire-resistant species of trees and plants suitable to your climate and soil from your State Agricultural Department.

Regular fuel reduction in a belt around the house cuts down the number of firebrands and reduces the chance that one landing on the ground will start a spot fire.

Roofs should be properly tied down because the wind created by a firestorm will rip off a poorly attached roof. There must be absolutely no gaps through which small burning rubbish can get in. One house at Mt Macedon was destroyed because burning leaves blew in under the front door.

Vents without metal flywire covering, gaps between roof tiles, the "flutes" of a corrugated iron roof (gaps between the roof and the fascia at the bottom; similarly between the metal and the ridge capping at the top) are frequent means by which fire gets into the house.

Some houses started burning through the accumulation of small firebrands on the bottom corners of wooden window and door frames or other ledges. The drawing opposite shows how to deal with this, by nailing a strip of sheet metal to such spots. This is practically invisible when painted.

It should be obvious that the roof material must not be inflammable. Cedar shingles are particularly disastrous. They explode into small burning fragments when hit by a firebrand. A bluestone house in Warburton burnt down — the roof was made of shingles.

Any fragile covering is unsuitable in fire-prone areas. This rules out corrugated fibreglass, asbestos-cement roofing, slates and even terracotta tiles. Metal roofing is the best commercially available material. Sod and ferro-cement should also be good.

Radiant heat

A large tree in full blaze creates an immense amount of radiant heat. Houses not properly protected have been known to catch fire from a forest burning hundreds of metres away. That's why there is little point in arguing whether trees should be cleared away to 20 metres from the house, or 80m or 200m.

There are three methods of protection: Reflection, shielding and wetting. All three should be used.

Other things being equal, a timber house with a good coat of white paint may survive a fire hot enough to set the studs alight through a red brick veneer wall. This is because the white colour reflects heat, while the dark colour of the bricks absorbs it.

For the same reason, the best roof cover is steel with *zincalume* coating, because this stays highly reflective for a long time. Also a study of the 1967 Hobart bushfires showed that high pitched roofs are more likely to catch fire than relatively flat roofs. This is probably because the high rise of a steep roof presents a bigger area to the heat radiation.

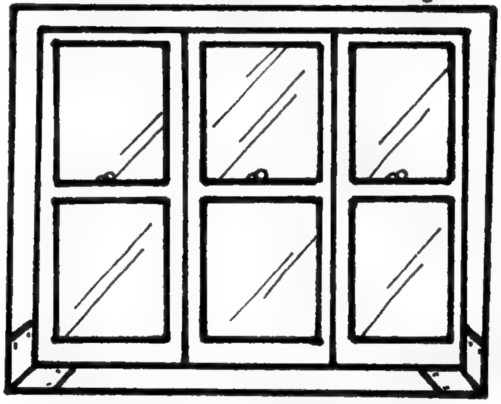
Heat causes expansion in metal. Because of this, metal-framed buildings have been known to distort to the point that gaps appear. Metal doors and window frames can also buckle, breaking glass. In either case, the fire gains entry. This does not mean that you need to replace existing aluminium-framed windows — just that you need to shield the frames from the radiant heat of a bushfire.

Windows and glazed doors are a means of access for heat radiation, even if the glass remains unbroken. They must be shielded in one of two ways: solid-framed metal mesh flywire screens, or solid shutters with a reflective outer surface.

You can make your own shutters by lining plywood or masonite sheets with reflective foil laminate (builders' "silver paper"). These (or the flywire screens) should be placed somewhere handy during the fire danger period, so that they can be clipped into place as the fire approaches.

Metal mesh flywire works in the same way as a *Davey* lamp, the miner's safety lamp in which the flame is enclosed in a metal cage. No explosion occurs, even if the air contains inflammable gases.

Protection for outside wooden ledges.



sheet metal plates nailed to timber window frames at corners

Lush vegetation provides a shield (as well as trapping firebrands). For this reason, a green "firebreak" is far more effective than bare ground. Although there should be a break in the forest canopy around the house, it should be filled with a variety of well-watered plant life, including isolated trees and large shrubs. It is a good idea to train vines and espalliered fruit trees up pergolas and the walls of the house itself. A major fire will kill the plants, but the plants will help to save the house from the fire.

Wetting is very important. The Cockatoo Pre-School Centre was saved in the Ash Wednesday fire, despite having a tar-based roof, because two men continually sprayed it with water from garden hoses. However, they were risking their lives. The garden hose could have been cut by fire and even the underground water pipes could have burned through. It is better to have a fixed outside sprinkler system with its own water supply.

Different fire authorities give conflicting advice on the size of a firebreak around the house. An Experimental Building Station report indicates that 15 metres is the critical distance for piles of firewood and inflammable trees etc. The Country Fire Authority (CFA) in Victoria recommends a break in the forest canopy of 20 metres around the house, 40 metres down deep slopes and towards prevailing summer winds. Undergrowth and the litter on the forest floor need to be cleared for a second belt of the same width.

The equivalent NSW recommendations are double this. As already stated, my preference is for a relatively small impact on the bush. You can never clear away so

BUSHFIRE DEFENCES
A summary of Bob's suggestions

Location: Take account of prevailing summer winds, steep slopes.

Vegetation: Positive firebreak between house and grassland or standing crops.

Break in forest canopy filled with green "firebreak", at least 20 metres around house (or as much as local fire authority requires). Regular fuel reduction for another 20 metres all around, at least 40 metres down steep slopes and towards prevailing summer winds.

Green firebreak: House surrounded by lush, green vegetation, for example, lawn cut short. Isolated trees, bushes, hedges to shield out radiation, to trap or deflect firebrands. Vines and espalliered fruit trees trained to run up walls.

Structure: Avoid metal structural elements, door and window frames. Clad roof with metal (zincalume is best). Wall material may be anything with a solid unbroken surface. Colour is more important — white is best.

It is extremely important to seal off or cover with metal flywire every gap, hole or vent.

Additional safeguards: Metal lining on bottom corners of wooden window frames and similar ledges.

Reflective shutters or metal mesh flywire screens for all glass surfaces facing outside, especially towards large trees.

Sprinkler system along ridge and potentially inflammable wall surfaces such as gables, supplied from a separate header tank with a buried metal pipeline.

much that you will be safe. Firebrands burned down some houses at Anglesea after being blown across 7km of clear ground. It is more important to fill the break with protective vegetation.

My own plans

Let me now describe my own plans for fire protection. My hope is that, once it is completed, my house will have an excellent chance of surviving a severe bushfire.

Overriding considerations have prevented me from picking a site on flat ground, or over a ridge. So I chose a spot on an eastern slope, with a spur shielding it from the north. Last summer there was a fire in the valley below us, but the westerly wind blew it directly away from us.

There are paddocks to the west and north. We have a gravelled road to the west and a large vegetable garden to the north. There is a wattle and gum forest below us. A walking track passes along the contour about 20 metres from the house. The bush below this is treated as a wilderness area.

I am in the process of clearing the trees within the 20 metre zone. The wattles there are a short-lived species and are dying off anyway. The only gum trees are to the south-east of the house, so I'll leave them.

I am planting a hedge of native flowering bushes along the walking track. The rest of the space will be filled with a variety of small trees and shrubs. Fruit trees and evergreens like rhododendrons will be included. The sub-surface drain getting rid of the household waste water (septic and sullage) is directly to the east of the house, so all this growth will be well-watered.

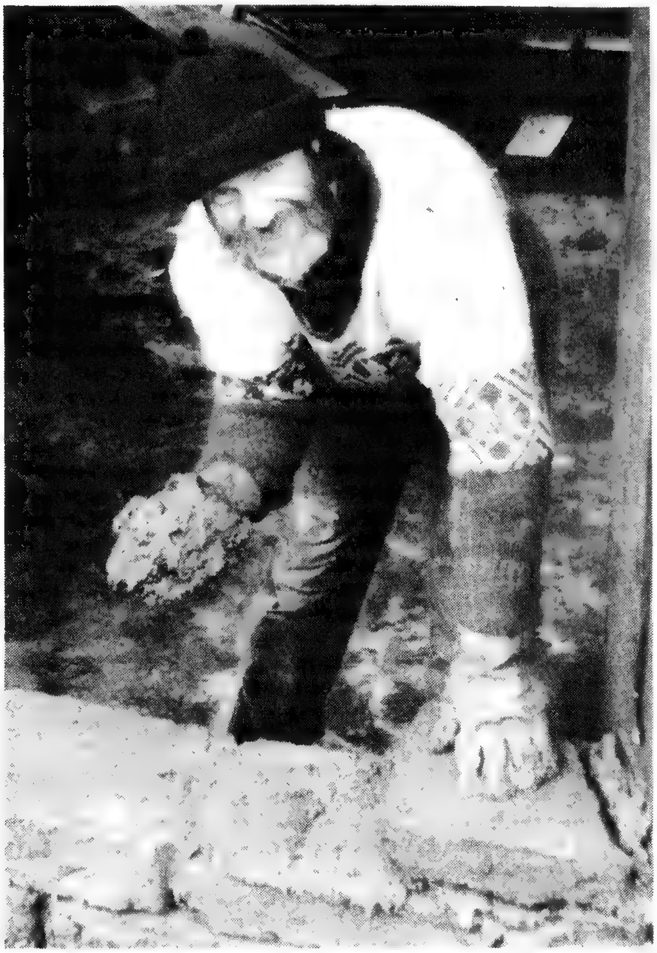
We will sow grass around the house. This will be grazed down or mown in summer. There are already a few vines planted next to the house. More vines and some espalliered fruit trees are planned. I even intend to train watermelon and pumpkin vines over the roof. This will shield it from radiant heat, keeping it cool on summer days as well as helping in the event of a fire.

The earth walls will be whitewashed. The roof is *Colourbond.* As we are in an area classified as having high landscape value, reflective roofs are not allowed. I am relying on the watermelons and pumpkins and a sprinkler system to reduce fire danger.

The sprinkler system will consist of a 100 gallon metal tank uphill of the house, fed from the main water system through a ball-valve and float. Buried metal piping will take the water to above the ridge beam and down the barge boards of the gable facing the forest. There will be regularly spaced sprinklers which can discharge a fine mist of water on the roof and the gable.

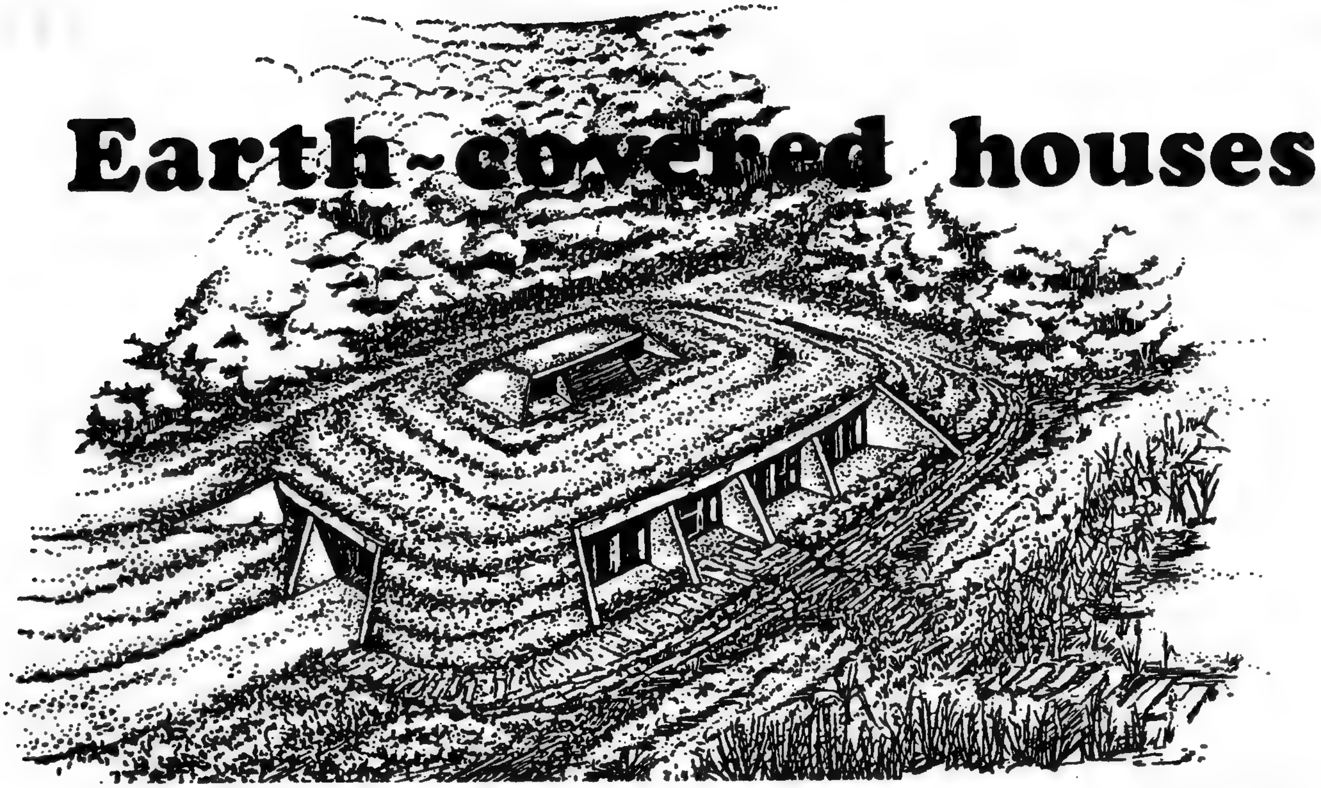
There will be reflective shutters for the windows facing east. I buy strong plyboard which is from recycled car packing cases. I'll bond reflective foil to suitably sized bits of this and equip each window (opening or fixed) with clips to hold the shutters. Windows on other walls will have wooden framed metal-mesh flywire screens similarly attached when needed.

Of course all gaps and openings will be sealed off or screened. At the moment, though, there is a very big opening indeed — the eastern wall isn't built yet!



Bob Rich laying pressed blocks at Marysville School.

Earth-covered houses



Earth Lodge, a bushfire-resistant earth-covered house proposed for a bushfire area at Wentworth Falls, NSW. By the incorporation of specially-designed shutters, it is possible to design buildings that are virtually bushfire-proof. The addition of shutters over the glazed areas will also enhance the overall security of the home.

An Introduction to Earth-Covered Housing:

basic information for australian conditions

Sydney A. Baggs & David W. Baggs, An *Ecasystems* publication, Chatswood, NSW, 1983, paperback, large format paperback, 39 pages, illustrated. Price $7.00.

Available at bookshops, energy information centres and building information bureaux, or by mail for $8.00 posted from Ecaspace Design, 4 De Villiers Avenue, Chatswood, NSW 2067.

Earth-covered or 'underground' houses are at last a reality in Australia and this well illustrated booklet is the best introduction to going under Down Under. The authors, father and son architects, are involved in 16 earth-covered building projects currently.

You could be living below your food garden in an energy-efficient, well insulated and waterproof home, protected from bushfires.

We have deliberately avoided rushing in before this with reviews of foreign books on the subject, feeling they were inappropriate for our soil and climate. Here the basics of site selection, materials, design, techniques and the pros and cons of earth-covered houses are dealt with for Australian conditions.

Mud-brick, adobe, pise, earth-wall and other similar wall construction methods are justifiably becoming popular in their own right. This arises because we are beginning to feel the economic pressures imposed by our 'high technology' building industry. (It is ironic that the brick-manufacturers have considered making mud-bricks because of the high cost of energy to bake conventional bricks.) But it is underground, or earth-covered housing that can provide the most direct form of passive utilisation of natural energy and also be adapted to the use of solar collectors, greenhouse technology, and 'low-technology' construction (although the research is only just getting underway). It appears to represent the major architectural trend that will enable humanity and nature to co-exist without the excessive environmental impact pressures of the past.

Earth-covered buildings have their floors, and a large proportion of their roofs and walls covered with soil of sufficient depth to support vegetation and modify internal air temperature. They are constructed by a 'cut and cover' method, and the wall, roof and floor elements are separated from the enclosing soil by a protective, waterproof membrane.

. . . If inappropriate Northern-hemisphere information (such as that espoused by the University of Minnesota, Dr B. Givoni, Dr G. Golany, Malcolm Wells, and many other US designers) is used to establish the depth of earth-cover to buildings in Australia, the resultant earth-integrated building could quite possibly perform worse than an uninsulated, non earth-integrated building on the same site. Already, inappropriate use of Northern Hemisphere design techniques has been made in several earth-covered and earth-bermed projects in Australia, with the resultant buildings providing disappointing thermal results.

Further, many US construction and detailing aspects are quite different to those required in Australia where, for the most part, soils do not freeze. In Australia, government and commercial standards vary from those existing in the United States of America, and local conditions create unique stiuations that do not have parallels in the States, eg, our fungus and termite problems virtually eliminate the possibility of using timber to construct earth-covered buildings.

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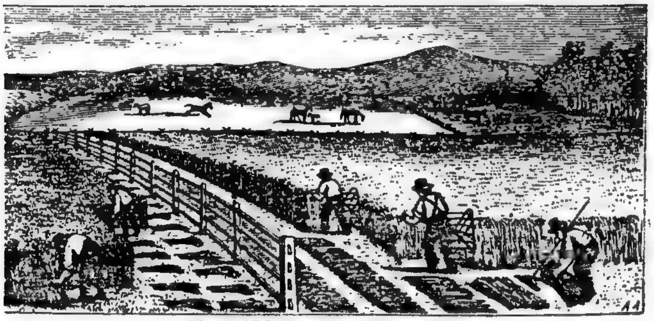


HARVESTING GRAIN

THE FORGOTTEN ARTS

Yesterday's techniques adapted to today's materials.

Richard M. Bacon, Books 1, 2, 3 & 4, Yankee Inc, Dublin, New Hampshire, USA, paperbacks, 62 pages each, illustrated. Price $6.50 each.

Distributed in Australia by Second Back Row Press, PO Box 43, Leura, NSW 2781. Add $1.00 per copy for postage.

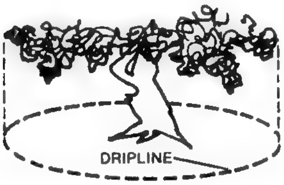
Yankee cunning, skills, crafts and recipes are celebrated and revived in these four books, each with 10 different chapters on specific subjects such as — cooking on a wood stove, keeping a family cow, fireplace cookery, natural dyes, coping with a whole pig, making plain and fancy soaps, working with a draught horse, sharpening and handling hand tools and digging and stoning a well.

They are a joy to read. Woodcuts and the style of writing evoke New England's colonial customs and history. Northern Hemisphere climate is a drawback, but applies to only a few 'growing' subjects.

Yankee Inc publishes Yankee magazine and The Old Farmer's Almanac, established in 1792.

Even in New England it is still possible and practical to raise a good portion of one's food in a little space and a short season. The land also provides fuel for cooking and heating, material for houses and barns, and a variety of products that will sustain both body and mind.

Despite the most careful and imaginative planning, there will still be too little time to accomplish everything. There will be projects that fail, harvests that do not live up to expectations, surpluses that spoil because they come too quickly and too soon, and animals that do not thrive. Learning to live with setbacks is a real part of rural life.



There are innumerable advantages to cooking with one's own wood. A 20-acre woodlot will supply a farmily's cooking and heating needs almost indefinitely, if culled and harvested properly. The cost of wood grown on the farm is lower than that of any other fuel. In addition, wood cookstoves continue to function when outside power sources fail.

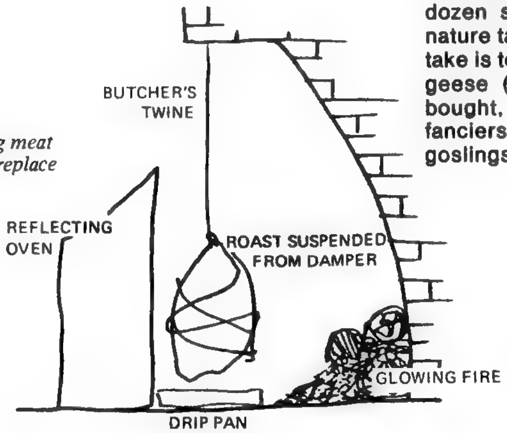
. . . Foremost (among the disadvantages) is the amount of wood demanded by the cook to keep meals coming on time. If it is available and at hand, woodstove cooking is economical. but the constant cutting, dragging, splitting, stacking and carting of wood into the kitchen can be a tiresome task in a busy world and has persuaded many a farm boy to leave for the city.

Whole Wheat Bread With Honey

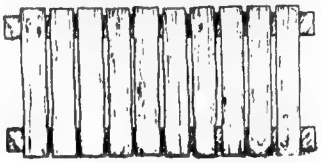
(three small or two large loaves)

3 tablespoons butter
3 tablespoons honey
1 pint milk (2 cups)
1 tablespoon salt
2 packages dry yeast
6 cups whole wheat flour

Proof the yeast in ½ cup of the warmed milk. Melt butter and honey in the remainder of the milk in a saucepan over low heat. When lukewarm add the yeast and salt. Stir while adding flour until the dough is stiff enough to knead. Knead on a floured board for about 8 minutes. Put in a greased bowl and let rise until doubled in bulk. Turn out on a floured board and knead again for a few seconds. Then divide into three small or two large loaf pans and let rise again. Bake in a pre-heated 375° (F) oven about 50 minutes.



Roasting meat in the fireplace

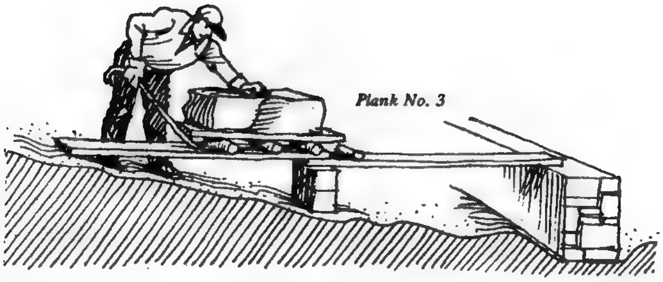


Space the planks on the deck ½ or ¼ of an inch apart to discourage rot.

To ensure the longest life for your footbridge, put flat rocks or pieces of slate under each of the stringers resting on the banks. Also, take the bridge up every few years and give it a fresh soaking of creosote, top and bottom.

Whether geese are raised as guardians, meat-and-egg producers, or merely as farmyard pets, they demand little attention from their keeper. It is best to start a flock of geese by either purchasing a mature pair or buying half a dozen six-day-old goslings and letting nature take its course. One course it will take is to tell you how many ganders and geese (males and females) you have bought, for it is difficult even among bird fanciers to be absolutely sure with goslings.

gotten Arts



Rollers are essential in dealing with heavy stones. A short plank (No. 3) placed on rollers allows an even greater load. Keeping the planks level is important for safety.

P. Fields' work stands out among all the Forgotten Arts
a true classic. It has all the details on dry stone construction
mortar) with mason's secrets revealed in each photo and
The walls are straight, curved, fitted, bonded, with step and
od tips on transporting stone and safety precautions.

The Forgotten Art of Building a Stone Wall

An Illustrated Guide to Dry Wall Construction

Curtis P. Fields.

Longer slabs may be more easily lifted in place by the use of two planks.

His are not the common rubble walls of our forefathers that snake their way among the New England hills and through the trackless woodlands. They are fitted, patiently laid structures running ruler-straight and level, each stone bonded to its neighbour and laid with precision and love.

How many men can look about them and find such sure proof of their existence in something they have done with their own hands?

Watch your footing at all times. When you are carrying or 'rolling' heavy stones, don't walk on sloping ground without watching your step. Look out for loose stones underfoot.

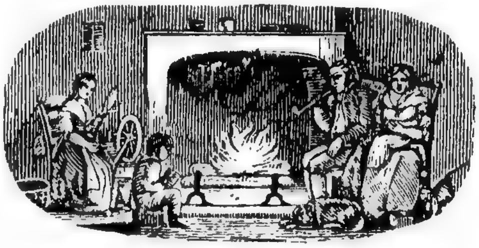
Keep fingers and toes 'out from under'. Any stone slap is potentially dangerous while you are in the process of moving it. Make sure you have seen to it that its near corners are safely propped up by other stones or wooden blocks before you investigate its underside with your hands or feet. Even then, it's much safer to use the curved end of your pinch bar to remove anything loose from under the slab.

The Forgotten Art of Building a Good Fireplace

Vrest Orton.

Vrest Orton aims at setting out how to have fire without smoke in this 19th century style book which tells the story of good fireplace design laid down by Count Rumford in 1795. It is the oldest of the Yankee books, first published in 1969 and now in its 13th printing.

From that day, I consulted masons, builders, architects and contractors, and they all calculated that a fireplace 42 inches tall and 19 inches deep was a funny fireplace. The proper fireplace, in their view, should be no taller than its depth: in short, if you have one 19 inches deep, you must have one no more than 19 inches tall! Why? Because they knew taller fireplaces would smoke, and never 'draw'.



It was then that I began to wonder. My fireplaces were two to three times taller than the depth and they all worked beautifully. Could it be that the old-time masons who made the brick and laid them up into my house and fireplaces, 140 years ago, were completely wrong? Or were contemporary masons, architects and builders the wrong ones?

The Forgotten Art of Building and Using a Brick Bake Oven

Richard M. Bacon.

All published by Yankee Inc, Dublin, New Hampshire, paperback, 64 pages each illustrated. Price $6.50 each.

Distributed in Australia by Second Back Row Press, PO Box 43, Leura, NSW 2781. Add $1.00 per copy for postage.

The brick bake oven was a surprisingly simple structure for a mason to incorporate in the fireplace complex when a house was being built or renovated. It consisted of a flat hearth, coursed brick walls, a domed roof, and a rectangular or arched opening at the bottom of the front end to serve the double purpose of inserting and extracting fuel and food.

Many reputable masons recommend the following proportions:

For use with hard brick: mix ten (10) shovels full of fine sand to one (1) bag of either light or dark masonary (mortar) cement. The colour you choose will be determined by the desired appearance of the finished joints. This is about a 2:1 ratio of sand to cement (use the same shovel to measure out your proportions of both sand and cement).

Or, use one (1) bag of Portland cement, one (1) bag of hydrated (mason's) lime and twenty (20) shovelsfull of fine sand. This will also produce a 2:1 ratio of sand to cement/lime.

There aren't too many brick bakery ovens left over from Australia's colonial days, but with this book by Richard M. Bacon you can build a replica or restore an old oven to working order and use it to bake bread like they used to on baking days long, long ago.

Homestead technology

SELF-SUFFICIENCY IN THE EIGHTIES

The Australian guide to the technology of survival

Mario & Lesley Zolin, George Allen & Unwin, Sydney, 1983, large format, limp cover, 173 pages, illustrated. Price $13.95.

The subtitle holds the key to the theme of this book. It is *technology* and how to use it to "engineer" your homestead block. It explains clearly much of the "how to" and the "why" of setting up water, electricity and heating systems and how to build tracks, bridges, sheds and animal shelters. This is *positive* and very well done.

Mario ("one of us is an engineer") and Lesley ("the other is not an engineer") Zolin moved away from the city to a 13 hectare bush block at Swifts Creek in East Gippsland, Victoria, erected a log cabin kit home and set up their "life support systems".

"The two of us have used the engineer's approach to survival for our own benefit over the past few years," they say in the Introduction to *Self-Sufficiency in the Eighties.* "We've tried out our own techniques, learned some new ones, adapted others — and learned to laugh at the tricks that the Universe can play. Our systems and ideas could serve as models for others, for we have survived."

All the practical information is there, well presented and illustrated in a matching format to Michael Boddy and Richard Beckett's successful *Surviving in the Eighties* (also published by George Allen & Unwin).

This very engineering approach is what prevents the book from being *the* book on self-sufficiency. It has no aesthetic values. Ludicrous extremes supposed to represent the "alternative" viewpoint are set up, then knocked down by the authors who appear to be quite selective in their technology. Petrol generators are okay but wind generators are out; solar electricity (photovoltics) is too sophisticated, but fibreglass insulation and polyurethane foam are acceptable; solar water heaters are "an approved" status symbol and "All I've ever read about proper orientation of dwellings is patent nonsense."

"Let's just get rid, first, of the fashionable homestead animals: the trendy donkey, coloured sheep . . ."

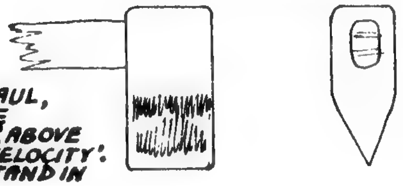
Apart from the unreasonable prejudice, there is much mischievous, seemingly deliberate misinformation, particularly the long diatribe against earth buildings, especially mudbrick, which we have asked Ian Factor, a mudbrick builder in the Blue Mountains of NSW, to answer.

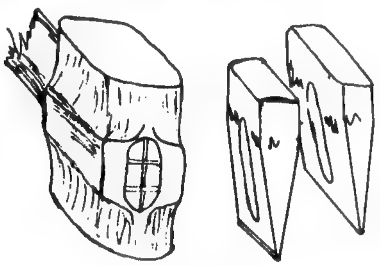
There's no mention of solar cells providing "cheap" electricity for country people quoted $10,000 for a "mains" electricity connection. The CSIRO must be wrong, of course, in all its research into low energy principles. The poor old donkey, transporter to half the world, gets yet another beating!

These *negatives* take up only a fraction of this otherwise worthwhile work. Don't let us put you off — read it for yourself.

In the past we have run many stories by Lesley and Mario Zolin, whose book, *Self-Sufficiency in the Eighties,* is reviewed here. On other pages we are pleased to publish stories by their children, Miriam and Joe. A very *Zolinesque* issue!

THE AXE, TOO SHARP, TOO LIGHT. GOOD FOR CUTTING (FELLING) AND LIGHT SPLITTING ONLY


THE 'CANADIAN' MAUL, THE WIDER ANGLE STOPS 'STICKING'. ABOVE A REASONABLE 'VELOCITY'. NOTHING WILL STAND IN ITS WAY.


MAUL AND WEDGES FOR LONG SPLITS (e.g. FENCE POSTS) OR THE TOUGHEST FORKS AND KNOTS.

A reply on mudbricks

By Ian Factor

My blood began to boil when I first read the comments by Mario and Lesley Zolin about mudbrick houses in their new book **Self-Sufficiency in the Eighties** (George Allen and Unwin, Sydney, 1983), so I decided to go through each point they make in their comments on "Shelter" in an attempt at a rational critique.

They state that the typical house described by "well over ninety per cent of people we have talked to" is "between 150 and 200 sq m in area, made of heavy timbers and mud (brick or pise) with cathedral ceilings, lots of wood panelling and tiled or slate floors. That, of course, is the image pushed by most of the 'alternative' building literature. And it is an image — with little relation to reality."

Certainly, there are mudbrick houses which fit this description and I agree that they are not necessarily the most appropriate in terms of self-sufficiency in the eighties. However, the Zolins seem to suggest that this is the typical mudbrick house. Of course it is not. There may be plenty of them in the Eltham mudbrick belt, but they are certainly not typical in general.

I know of scores of mudbrick houses in Victoria and New South Wales that are not built to the "formula" described and which definitely do bear relation to the realities of the eighties — a reality, by the way, which increasingly forces people to become owner builders if they want to own their own home.

Mario and Lesley Zolin seem to be terribly bitter about the use of earth as a building material, as in these comments:

> **"It seems like an incantation or a formalised celebration of faith but the discussion on housing with our neophyte visitors almost invariably starts off with 'Of course we are going to build in mudbricks.' A one second pause then I ask 'Why?' This usually brings a shocked pause — as if I had voiced some heresy or sacrilege. It seems the question has never been asked before. Composure is usually recovered and a number of reasons trotted out from cheapness to insulation. None of these reasons stand up to scrutiny and the final resolution is that they are building in mud because they want to build in mud."**

There is nothing wrong with critically examining the benefits of building with mudbricks, but the Zolins seem to have a narrow perspective on the facts. Mudbrick making and laying is labour intensive and therefore costly if you employ others. Obviously, the cost benefits are great if you do it yourself and people can learn to build with mudbricks in a short time. Self-sufficiency in building is achieved by many people using mudbricks. A book with the title **Self-sufficiency in the Eighties** should recognise this.

Perhaps the only experience the Zolins have had with mudbricks is around Eltham, where many professional mudbrick builders have put up some very expensive mudbrick homes? The owner builders have been pushed out to Kangaroo Ground, Christmas Hills and beyond.

As far as insulation goes, the Zolins say earth walls are not good insulation and that 50mm of fibreglass or 25mm of polyurethane foam is better than 300mm of mudbricks. Well, I guess the tiles on Skylab are better insulators than earth walls too. So what? All these "better" products are the result of high energy consuming industries. Earth walls are not and the massive nature of earth walls means that they have great potential for storing both heat and coolness.

This potential is called thermal mass. Without using specialist technologies, a building can take advantage of the thermal mass by following simple design criteria. See **Mudbrick Notes**, R. Mitchell and B. Woodward (Earthways Farm, Wollombi, NSW), page 2.

The Zolins also say that mudbrick walls are "seldom allowed as load bearers by councils." What gobbledeygook! I know of no councils which refuse load bearing earth houses (and that includes Eltham council). The Experimental Building Station code on earth building construction — **Bulletin No 5** — says that if a mudbrick can be handled after 28 days air drying and hasn't developed cracks larger than 15mm and wider than 3mm, then they are suitable for load bearing walls. Most councils, especially in NSW, accept Bulletin No 5 as the code for earth wall construction.

The Zolins say that because of the poor water resistance of earth walls it is necessary to double the roof area of the house to provide extra protection. Again, this is blatantly untrue. The Experimental Building Station has developed the Accelerated Erosion Test to establish the water resistance of earth walls. Once the mudbrick has passed the test (if it does not pass, an additive such as cement will have to be used), a certificate is issued stating that the block is suitable to be used in any exposed situation. No eaves or waterproof render are needed. Again, many councils are accepting this test as the only one required. So you don't have to double your roof area, earth walls can be exposed to the weather.

Next, the Zolins are worried that earth walls are dusty and say that to overcome this people put chemical "gunk" on their walls. "Where is the virtue of the 'natural' (whatever that means) 'earthy' (whatever that means) walls when you cover them with a sprayed or brushed on plastic sheet?" they ask.

Well, there are alternatives to these chemicals, such as skim milk, but again the Zolins miss the point. They say that people want to live in earth houses because "they carry the right image. They are cosmetic." Are the authors so rational that they are incapable of an emotional response? People love, yes, love mudbrick houses because of the feelings they get when they are in such a house. If using chemicals on the walls spoils this feeling, then people won't use them.

I must concede that the Zolins are right about one thing: earth walls are heavy and therefore require strong footings to support them.

One of the most misinformed statements made about the use of "alternative" building materials in this book is that if they were so good they would no longer be alternative, they would be conventional. Might I suggest that in places such as Eltham and New Mexico they are being seen increasingly as conventional materials (and always have been in over one-fifth of the world — Keith and Irene).

"Mainstream builders and architects are not fools," they conclude. Well, obviously the Zolins have never seen the new sprawling suburbs of the Western Plains of Sydney, the hotboxes built by "mainstream" builders in "conventional" materials or the heartless, soulless cities designed by our architects. After four years of architecture at university, I came to the conclusion that architects knew a lot about materials (such as steel and concrete) and about measurements, but very little about the effect their "creations" have on the people who have to live in them.

The self-sufficiency movement was born out of a disgust of the de-humanising conventional way of life. Mainstream architects and builders, that the Zolins so admire, embody this rat-race existence. People anxious to get away from such a lifestyle see earth wall construction as a way of being able to express themselves, something that's hard to do in our society. They don't need the so-called "experts" we have been told to depend on throughout our lives.

Mario and Lesley Zolin seem to me to be unable to appreciate the essence of earth wall houses, that indefinable emotional response that is lacking in most of today's "modern" buildings. It's a great pity.

Ian Factor is a member of the Earth Building Forum and edits its newsletter, **The Mud-Slinger**.

Kevin Osmond's own mudbrick house at Stroud during building.

Earth building notes

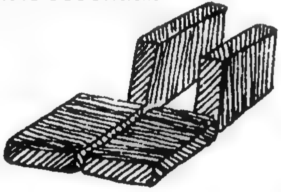
MUDBRICK BUILDING WORKSHOPS

Stroud, NSW. Weekends, September 24-25, October 22-23 and November 5-6. Fee $55.00 per person. Write to Kevin Osmond, PO Box 16, Stroud, NSW 2425. Phone (049) 94 5233.

These two day courses run by builder Kevin Osmond will cover mudbrick making and laying, setting out buildings, wall finishing, building in windows and doors and plumbing and wiring. There will be a discussion and question time and a tour of *The mudbrick monastery* at Stroud, featured in *Earth Garden 29,* and of a mudbrick home.

On the Saturday night a main meal will be provided, followed by a film showing the building of the monastery. Camping facilities are available.

The course starts at 9.30 am Saturday and ends at 4 pm Sunday. Early enrolment is essential.



'MUDBRICK' BUS TOUR

A bus tour of mudbrick buildings in the Gosford area, NSW, conducted by the Earth Building Forum is planned for Sunday, September 25.

A delightful lunch is promised and there will be a slide show of mudbrick homes. Price is $20 for EBF members and $25 for non members.

Book early as places are limited. Contact Ian Factor of EBF (047) 59 2194.

DROPPING A MUDBRICK

By Dr Robert Rich

Many of the enquiries I have received concern the testing of mudbricks.

Since the appearance of the third edition of *Earth-wall construction,* published by the Experimental Building Station, the 'accelerated erosion test' in Appendix A (page 81) has been taking over increasingly as *the* test for mudbrick quality.

People who write to me are worried because they don't know how to go about getting their bricks tested — or because their bricks failed to meet the test. Some Building Surveyors seem to be according the test the status of an *Australian Standard,* making the permit for a mudbrick house conditional upon the bricks passing the accelerated erosion test.

What is the test, and why was it developed?

The accelerated erosion machine is basically a high-pressure hose which plays a stream of water onto the sample brick under controlled conditions. It was devised because the many testing procedures previously used had little correlation with each other, or with the long-term durability of earth walls.

I am concerned, however, that a useful empirical indication of brick durability should become an essential requirement for earth building. Placing such a reliance on this test shows a misunderstanding of the problem. It is also contrary to the intention of the researchers at the EBS.

The *Bulletin* states: "For interior walls and exterior walls that are to be protected, simply ensure that the soil can be cast into blocks that can be handled and do not crack excessively" (page 12).

In other words, if your bricks fail the accelerated erosion test, you should protect your wall from wind and rain. Overhanging eaves are a part of good design for any earth-walled house in any case and a durable render on the outside face will preserve the wall for a very long time, even if the bricks are of poor quality.

This is fortunate, since the satisfactory performance of even several bricks is no guarantee that the wall as a whole is of a uniformly high standard. Soil characteristics vary enormously, often even on the one building site. Soil type changes with depth, and often quite different soils occur side by side within a few metres. These different soils invariably get mixed up during brick making and lead to a great deal of variability in brick quality.

Brick quality is also affected by the water content of the mix, the care with which the mould was filled, the temperature and humidity of the air during drying, and probably several other factors.

In other words, mudbrick, like timber, is a 'live' material. Making and using mudbricks is not a science, but an art like cooking. Part of the charm of mudbricks is their variability. This means that not all mudbricks in a building are of the same quality — but once the bricks have been laid their quality no longer matters.

My test for mudbrick quality is to toss a brick (or brick fragment) up in the air and let it land on the ground. A good brick will make a dent in the ground. It will not crumble or shatter into little pieces. If its shape is chunky, it may be quite undamaged. If it is long or wide relative to its thickness, it may cleanly break into two or three pieces.

Well, on occasion I have been forced to lay bricks which failed my test miserably and which would certainly have failed the accelerated erosion test. Yet the walls have invariably stood up to the weather between the time of laying and the application of render (in one case, more than a year later).

So, my advice is: if a mudbrick survives the process of laying, it will survive in the wall — as long as good building design and practice are followed.

EARTH BUILDING COURSES

One day earth house building courses, $25.00 per day. Contact Dr R. Rich, Moora Moora Co-operative, PO Box 214, Healesville, Victoria 3777.

Dr Bob's mudbrick making and laying lessons start again in October. You bring gumboots and samples of soil and bricks if you are building your own home, you get advice, instruction, practice and even soup and bread!

COMMUNITIES

ALTERNATIVE LIFESTYLE RESEARCH

By Bill Metcalf

Here, at Griffith University, my research assistant and I have been involved in research on "alternative communities" and "alternative lifestyles" over the past several years. As well, I am personally involved in the movement, living in an urban commune and being an active member of a rural co-op (Ferndale).

We are particularly interested in recruitment and socialisation processes, ie, how one joins a community or how a community finds new members and what happens to people when they adopt a new lifestyle. Very little information exists on these matters, other than anecdotes. We hope to gather together more of the information now held by people like yourself on these important questions.

For this phase of the research, we shall be contacting people who have used *Earth Garden* in an attempt to either recruit new members to an alternative community, or who have sought to join a pre-existing group. We shall be selecting names and addresses from *Land Lines* as well as from the *Letters* section and mailing out a survey, as well as a prepaid return envelope. This survey will be seeking to increase our knowledge of how one joins/forms a rural co-op or alternative community.

If any *Earth Garden* readers would be willing to share with us their experiences in locating a suitable group, or in finding suitable people to join them, we would be pleased to hear from you. What do you think works? What has been your experience? What problems are involved? What advice would you offer to any new/prospective alternative lifestyle participant? All letters shall be acknowledged and will be treated in strict confidence.

With the Australian government looking at the idea of funding for rural co-ops or kibbutzim as part of a job creation/unemployment reduction programme, it is important to provide data to ensure that any "assistance" be beneficial and not harmful, in the long, as well as the short term.

To gain information about how such money could be used to assist alternative lifestyles, it is important to seek ideas from those already involved. For instance, it could be useful to find out: What people feel about federal government involvement? What needs, not now being met, could be met by such a programme? What job creation ideas have been tried and which have worked or failed? What job creation ideas might exist in any given area? What jobs might be able to be created with some (what?) assistance? What training/housing/work facilities might be available? What would people think of an "extension service" to provide advice and assistance to small-scale "new settlers", much like our agricultural departments provide to agribusiness?

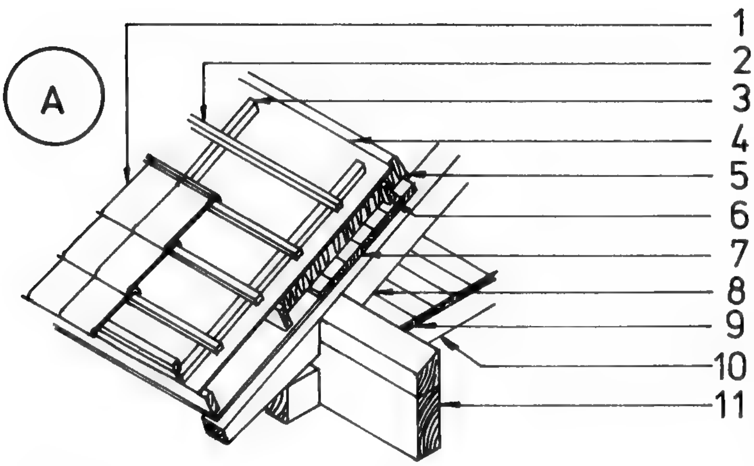
If you have any ideas on these questions, we would be pleased if you would share them with us. The Office of Youth Affairs in Canberra has been in touch with us about this research and are looking forward to any ideas we can put forward.

We are involved in other aspects of this work as well, so it is possible that some few of you might be contacted directly by us.

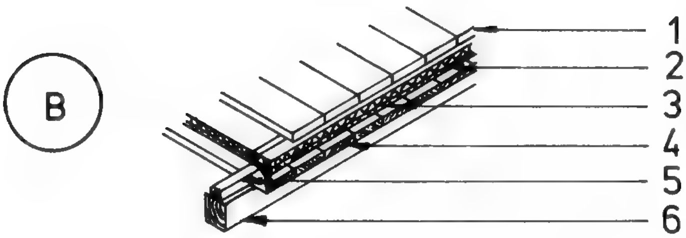
In conclusion, let me repeat we would be pleased to hear from any *Earth Garden* readers who would be willing to share with us their ideas about alternative lifestyles. In particular, we want your ideas on what form any government support should take.

You may phone me on (07) 275 7457, or write to Bill Metcalf, C/- School of Australian Environmental Studies, Griffith University, Nathan, Qld 4111.

Building biology — and



A — ROOF
1. Terracotta roofing tiles. 2. Battens. 3. Battens (40mm aeration space). 4. Board. 5. Vegetable insulation (100mm). 6. Battens. 7. Tongue and groove (T & G) boards. 8. Rafter. 9. Tongue and groove boards. 10. Bearer. 11. Wall plate.



B — CEILING AND UPPER FLOOR
1. Tongue and groove boards. 2. Vegetable insulation. 3. Layer of sand. 4. T & G boards. 5. Battens. 6. Bearer.

Building biology *(Baubiologie* in German) stands for a wholeness point of view — the engineering and architectural design of houses for human health. Wolf-Harro Krum, who trained at the Institute for Building Biology in Germany, wrote a general introduction to the biological view of building in *Earth Garden 36* (page 54), followed by *The Electromagnetic Climate* in *Earth Garden 38* (page 53).

By Wolf-Harro Krum

I guess you would like a house with a positively impressive atmosphere — friendly, warm and cosy? Its climate, you feel, makes it a home. It provides shelter when you need it and it is a source of recreation and the centre of the world for your children. It can stimulate your imagination — and the kids' too — and act as a base from which to go out and explore the surrounding environment.

Like every other house it consists of a roof, walls, windows and doors. We should utilise our knowledge of how to create a good indoor climate and subsequently establish a dwelling with a high value for living in it — a *biological building.*

You can learn the most about indoor climate by observing the housing of animals, their nests, caves and lairs. The building materials are collected from the surrounding areas. The construction results in an increase of insulation from the outer to the inner layers. Vegetable materials have good insulating properties as they are porous and not of dense structure.

Simple human shelters are similar to those made by animals. Although our ancestors built for beauty and solidity, they mostly used timber, clay or claybricks as well as vegetable materials such as bamboo, straw, reed, branches and bark.

Up to the middle of this century, the common building materials were neutral (bricks, clay, lime and others) or vegetable in origin. The rapid changes since then, accompanied by many technical and electrical installations, has led to a total alteration of the indoor climate. Many scientists are convinced that we still don't know much about the far-reaching health problems resulting from these changes.

Professor Bielenberg had an interesting experience in building stables for animals. He found that 'bad' stables shorten the life span of the animals inhabiting them as well as causing sterility and diseases (epidemics, rheumatism, etc), reducing performance and increasing feed consumption (pigs kept in 'bad' stables eat almost twice as much as in healthy stables).

Furthermore, he found that a healthy climate can't be achieved simply by installing an exhaust fan.

Vapour barriers and insulation layers have not been useful and hard building materials like concrete are also unsuitable. The ceiling is of special importance. Best is a ceiling built of wooden battens with a layer of straw or with straw-mud infill.

Obviously, the choice of the right building materials is important. The materials and the proper use of them determine all climatic factors:

- the aerial and surface temperatures
- temperature gradient and heat flow
- moisture content of air and walls

the indoor climate

(hygroscopicity, condensation and others)

- ventilation (diffusibility of building materials)
- odours (capacity to absorb unpleasant odours
- the electromagnetic factor.

Here are some recommendations:

Don't use hard building materials like concrete, metal sheets, etc for walls and ceilings. These should only be used *outside* the house.

They are good heat conductors and have a low surface temperature during the cold months and a high one during summer. They are not soundproof. Their diffusibility, absorbing and hygroscopic powers are low. Clean, fresh air can be achieved all year round without drafts, if all walls and ceilings are breathing!

Hard building materials also alter certain radiations to undesirable ones and support unhealthy microflora and fauna. They are not electrically neutral, thus reinforcing technical electromagnetic fields that you don't want to have at all. They often have unpleasant colours and odours.

Avoid the use of big glass areas. As their surface temperature is different to that of the walls, they cause movement in the air which will make you feel uncomfortable, especially during the cold months. With no air movement and warm walls you feel warmer with some degrees less of room temperature than in the opposite situation.

Large windows also reduce the wall space needed for absorption, diffusibility and hygroscopic power. It's better to have some more small windows instead of a few large ones.

Don't use synthetic materials for floor covering, wall lining and insulation and avoid them in glues, paints, pest controllers, detergents and your clothing as well.

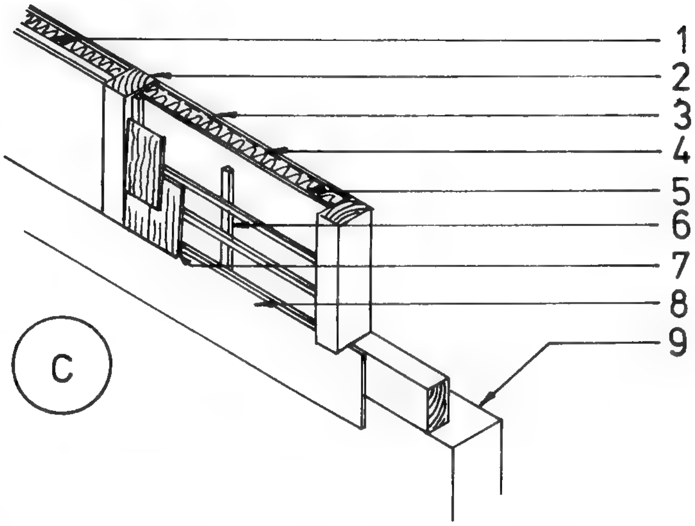
These materials bring about a too low moisture content of indoor air. They do not regulate the moisture content at all and often they exhale mild to extremely toxic substances, depending on age, temperature, sun radiation and micro-organisms. Synthetics are electrostatically chargeable and completely alter the electromagnetic climate.

Avoid vapour barriers where possible. They often lead to electrostatic charges.

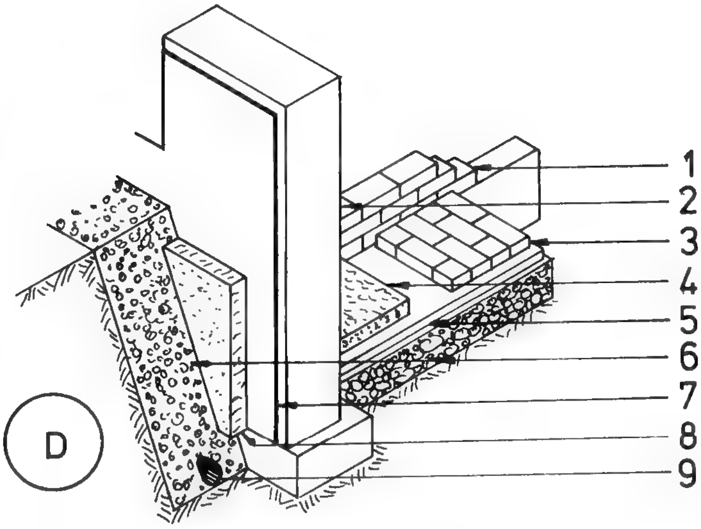
For example, timber is a very healthy building material in itself. It breathes and, acting like a sponge, exchanges used and polluted air for fresh air. It also regulates the moisture content. If painted, all of these functions are stopped — you could then use plastic instead.

There are alternatives to common chemical wood protection, for example, bee wax preparations and the use of ant caps.

To show the use of healthy building materials I include some sketches of floor, wall and ceiling details from a recently built house.



C — EXTERNAL WALL
1. Alternative: Board and render. 2. House frame. 3. Plasterboard. 4. Vegetable insulation. 5. Board. 6. Battens (40mm aeration space). 7. Red cedar shingles. 8. Board. 9. Footing.



D — CELLAR WALL AND FLOOR
1. Partition wall. 2. Brick masonry. 3. Brick pavement. 4. Alternative: Compacted mudfloor. 5. Sand. 6. Fine crushed rock. 7. Render. 8. Clay layer. 9. Drain.

access

Permaculture design course for women

November 13-26, 1983 in the Tweed Valley, north eastern NSW. Cost $200.00. Further information from Lea Harrison, Stoddarts Road, Tyalgum, NSW 2484. Instructors: Judith Turley, Susie Edwards, Lea Harrison.

As there have been only a relatively small number of women trained as permaculture consultants in Australia, this course is only for women, to help equalise the numbers. Child care will be provided.

There will be lectures on all aspects of permaculture design, urban and rural; workshops; outdoor practical and observation and a practice design.

Permaculture workshops

With Bill Mollison

Earthmoving, dams & levelling — October 22-23; complete property design — October 27-28, both 9 am-3 pm, rain or shine in the beautiful Yarramalong Valley, west of Wyong, NSW. Price $50.00 for each two day course.

Information from Alice Wise, 208 Forest Road, Hurstville, NSW 2220. Phone (02) 95 5876.

NIMBIN 73-83

LIFESTYLE CELEBRATION

Nimbin, NSW, September 20-25.

Information: C/- Rainbow Region Foundation, PO Nimbin, NSW 2480.

Ten years after the *Aquarius Festival,* Nimbin remains a powerful focus and symbol of the *alternative* society in Australia. One of the aims of the celebration, to be held on a 100 acre property at the entrance to the Tuntable Valley, Nimbin is to show that the work done in rural communities is a valuable contribution to *all* society.

The form of the festival is being shaped in a series of workshops open to anyone interested in being involved. Some of these are on healing, shelter, peace and life against nuclear war, bamboo and food.

There will be workshops, markets, entertainment, — films will be made and shown, Nimbin archives displayed, theatre, pantomime, handcrafts, murals, puppets, talk, lots of music and a pageant on the last morning (Sunday, September 25).

Newsletters with the latest information on the festival are $1.00 each from Rainbow Region Foundation.

PROJECT SHELTER — THE HEARTH

As part of the *Nimbin 73-83 Lifestyle Celebration,* Project Shelter — The Hearth aims to bring together people, energy, talents and skills towards the formation of new rural lifestyle communities.

Whether your needs be for personal growth; a secure and loving environment; creative expression or new and ongoing experience in harmony with nature, we may be able to introduce you to those people and the land with which to form your lifestyle dream.

Contact Paul or Gloria, Project Shelter, Nimbin Information Centre, Cullen Street, Nimbin NSW 2480. Phone (066) 89 1492.

NATIVE FORESTS T-SHIRTS

Native Forests Action Council, C/- Environment Centre, 285-287 Little Lonsdale Street, Melbourne, Victoria 3000.

Buy T-shirts or windcheaters at extremely good value and support a good cause — Victoria's native forests and wildlife. *Save Native Forests* T-shirts, white with green gumleaf motif are $6.00 each (including postage) and windcheaters with the same design are available in red, blue and yellow for $13.00 posted. State size (and colour for windcheaters).

There are also posters of wildlife, greeting cards, hand-crafted mugs, badges, stickers and full colour posters of the East Gippsland forests being threatened by woodchipping and logging operations. Send SAE for details.

ORGANIC KNOW-HOW

Organic Know-how Education Day.

November 27, at 'Sunset Vista', Organic Farm, 115 Francis Street, Bringelly (between Camden and Penrith). Enquiries Dianne Ayling, (02) 603 4184, or PO Box 2, Bringelly, NSW 2171.

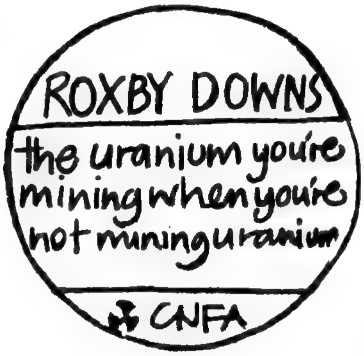
Run by The Organic Growers' Association of NSW, the 'know-how' day will feature speakers on growing food organically, workshops and demonstrations (including food preparation) at Mike and Joyce Lubke's 'Sunset Vista' organic farm.

CLOSE THE GAP

Pine Gap, Northern Territory, November or December.

Women's Action Against Global Violence (WAAGV). PO Box K637, Haymarket 2000. Phone (02) 267 6162, or FANG, PO Box 70, Lyneham, ACT 2602.

Women from Canberra and all around Australia will be meeting at Pine Gap to protest against the presence of this foreign military installation (and potential nuclear target). The date has been set as November 11, though this may be altered to December after consultation with Aboriginal women.


ROXBY DOWNS
the uranium you're mining when you're not mining uranium
CNFA

ROXBY DOWNS BLOCKADE

Roxby Downs, South Australia, August 27-September 4.

Roxby Downs Blockade Collective, F.O.E., 366 Smith Street, Collingwood, Victoria 3066. Phone (03) 419 8700, Campaign Against Nuclear Energy (CANE), 291 Morphett Street, Adelaide, SA 5000. Phone (08) 51 3821, or Coalition for a Nuclear Free Australia, C/-Greenpeace, 787 George Street, Sydney, NSW 2000. Phone (02) 211 0089.

A non-violent blockade of the Roxby Downs uranium mine is planned to draw attention to its potential dangers in contributing to nuclear war and radioactive pollution. In 1974, India was the first nation to explode a bomb using fuel from a civilian nuclear reactor.

All participants must register and take special training in non-violent direct action for the blockade. Donations are welcome and a booklet on Roxby Downs is $1.50 from CANE.

SEED SALE

Tarrington Exotics, Teesdale, Victoria 3328. Catalogue $1.00.

Rudolf & Evelyn Schulz of Tarrington Exotics (formerly Forest Edge Seed Farm) tell us that they are discontinuing their seed business in December and offer *Earth Garden* readers the chance to buy all seeds in their catalogue at a 33% discount until sold out.

The specialty is vegetable seeds, especially legumes, most of which originate in the sub and true tropics, but which will adapt to most areas of Australia. They include hyacinth bean, scarlet runner bean, jackbean, yam bean, yard long bean, sword bean, soybean, tepary bean, snake bean, lima bean, pigeon pea, black-eyed pea, winged bean, leucaena, cowpea, wax gourd, snake gourd, broom sorghum, amaranth, rice, cotton, buckwheat and others.

BOOKS BY MAIL

Aquarian Book Distributors

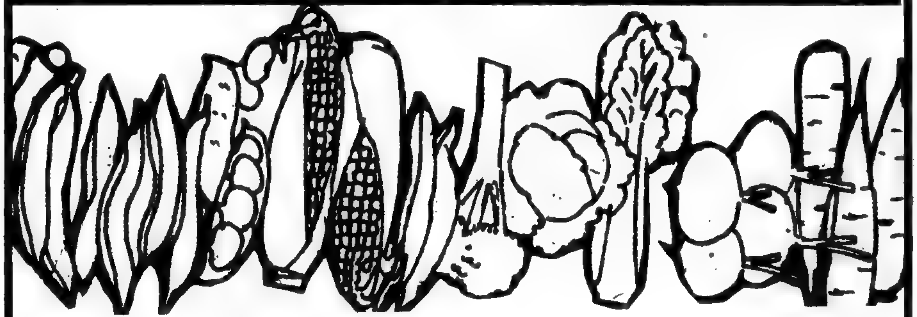
Free catalogue, from 82 Sussex Street, Sydney, NSW 2000.

Books by mail covering organic gardening, natural health, alternative energy and related subjects, with some 500 titles available.

WORLD CONGRESS ON COLOURED SHEEP

Lincoln College, Christchurch and Massey University, Palmerston North, New Zealand, January 20-31, 1984.

The Congress, organised by the New Zealand Black and Coloured Sheep Breeders' Association (Inc), will have world speakers, farm visits, exhibitions of wool and handcrafts, talks on genetics, sheep husbandry and marketing and scenic tours. For information, contact Robert P. Williams, Congress chairman, R.D. 12, Masterton, New Zealand.



Organic Fruit and Vegetable Co-operative

321a Smith Street, Fitzroy, Melbourne (near Johnson Street). Phone (03) 419 8700.

Annual membership $10.00.

This new food co-op is being set up by a collective of five women in association with the Food Justice Centre of Friends of the Earth to provide inner city Melbourne people with fruit and vegetables free of chemicals and pesticides.

The women — Sue, Volle, Judy, Sarah and Jane — have been funded for six months by the Victorian State government through its Employment Initiative Program (EIP).

The group also hopes to improve the marketing network between growers, distributors and consumers of organic produce.

Friends of the Earth (FOE) Food Co-operative

366 Smith Street, Collingwood. Phone (03) 419 8700.

Membership $2.00.

The FOE food co-op now has a membership of some 500 households (about 1500 people) taking part in providing a wide range of food including fruit, oils, legumes, peanut butter, vegemite, nuts, juices and basic household items like soap and toothpaste.

"The co-op is thoroughly clean with new hard-wearing linoleum (laid to last) and freshly painted walls. We will soon be purchasing regulation scoops and hopefully more practical bins."

The co-op has been going for six years and is considering imposing a limit on the number of members.

Warren Bateman is 14 years old and lives in Melbourne. We hope his story and our other articles on herbs in this issue will encourage young and old people to think about the rewards of growing herbs.

"My small scale garden is packed with herbs," Warren wrote to us recently. "You could say I don't know very much about them, but I absolutely do. My grandfather was a farmer and he encouraged me from the time I was old enough to walk.

"Gardening and self-sufficiency is all I strive for. Your book opened the door to many a new way of life to look forward to, you 'hit the spot' of what I've always wanted to do."

Try herbs

By Warren Bateman

Herbs are the most versatile plants that any gardener can grow.

Many herbs can be grown in containers while many others suit rockeries. If you want your garden over-run, plant herbs which have a quick spreading root system. In no time they will spread through your garden and you will never be able to get rid of them.

It's best to put your herbs in a sunny well drained position. They thrive on a mix consisting of well rotted organic material and animal manure.

These delicate creatures like to be kept moist but not wet. When placing them, put them in a spot that is well protected from winds and preferably in warm air.

You can grow herbs from seed, cuttings, divisions and layering. Spring is the best time for planting and propagating. Young plants will sprout up quickly. At this time it is also better to cut off all woody growths of established plants.

When late summer comes, pick and store all large amounts of new growth so you will have some when the non-productive season comes along. Pick the herbs early in the day then hang them in a dry, cool, airy place until brittle. Then take off foliage and store in jars which are completely airtight.

In the 'growing months' give your herbs a monthly feeding with a fertiliser made from animal manure, or a liquid animal manure.

Mint is a popular herb. A few varieties are available. My suggestion is to grow mint in pots. If you don't it will spread and will be hard to eliminate.

The *thymus* varieties are also decorative. Caraway thyme is a creeping perennial herb with an attractive pink flower. Lemon thyme makes a useful ground covering. *Thymus vulgaris* grows about 30cm tall and is popularly served with meat.

Marjoram is a bushy perennial herb. It has grey foliage and white flowers.

In *horseradish*, the roots are used and it is advisable to dig up the roots every year and plant new ones.

Parsley is a decorative plant that seeds every second year (bi-annually), so put in new plants every second year.

Basil is an annual that can be grown from seed and then transplanted to the garden bed.

Garlic is a root plant, used to season many different 'international' dishes.

Chives are used like leeks. I grow them from divisions.

Dill is an annual. Plant it direct because it weakens when transplanted. Its aroma is delicate.

If you ever run dry on information about herbs, go to your local bookshop or library. And if you want to be self-sufficient, look carefully and you'll find out that herbs can be used for medicine too.

Happy herbing.

Warren Bateman's story reminded us that, apart from the occasional article, it has been a long time since we had stories on herbs and old fashioned plants in *Earth Garden*. Herbs are such useful plants, easy to grow in small spaces or even in pots on the windowsill.

The best place to grow herbs is near the kitchen, of course, to use them in salads, for flavouring cooking and for herb teas.

Part of Wendy and Terry Abbott's herb garden.

Suppliers

BURN BRAE HERB FARM

Wendy & Terry Abbott, "Corrugation Drive" (PO Box 68), Glen Aplin, Qld 4381. Phone (076) 83 4321.

At the moment we are selling potted herbs locally through shops and to anyone who calls by to visit. We seem to be known for our herbal remedies for common ailments and now grow a lot of medicinal herbs for making up ointments, oils and teas. People often come to buy the fresh ingredients picked from the garden.

People in the Stanthorpe area are most welcome to visit (please phone first). We don't have mail orders currently, but we can supply a list of the herbs we have (send SAE).

HONEYSUCKLE COTTAGE

Judyth and Keith McLeod, Lot 35, Bowen Mountain Road, Bowen Mountain, via Grosevale, NSW 2753. Open Friday, Saturday and Sunday, including public holidays (except Good Friday and Christmas or New Year weekends).

We haven't yet been able to visit Honeysuckle Cottage, but it already has a name as "the home of old fashioned plants" among gardeners, particularly rose and herb lovers.

While Dr Judyth McLeod (who wrote the story on rosehips for us in this issue) is away lecturing at Hawkesbury Agricultural College at Richmond during the week, her husband Keith looks after the retail nursery, mail order and production of plants.

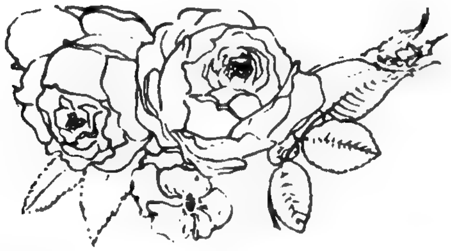
Honeysuckle Cottage has large display gardens filled with fragrant herbs, old fashioned roses and cottage garden plants. "You are welcome to browse, sniff and nibble as you wish," says Judyth. "Within the nursery area in spring (between late August and early November) you will find a sheet of bluebells, masses of naturalised daffodils, a large offering of potted tulips, rare daffodils and jonquils, fragrant hyacinths, crocus, many rare and colourful smaller bulbs and lovely bowls of mixed and fragrant miniature bulbs exclusive to the nursery."

How to get there? "We are some 10 minutes from North Richmond, near the top of the mountain and on the right. Quite literally, when you hear the bellbirds, our property is on your right."

Mail order

Honeysuckle Cottage Plant Catalogue, 52 pages, $1.00 post free.

This lovely catalogue, full of quotations about plants, has details of just about every plant or herb you've ever heard of. Special collections at $17.50 each are sent with a pressed lavender card and include a Shakespeare collection, one for white witches, another for black witches, herbal tea, knot garden, Biblical garden and a gourmet collection. There are gifts like pomanders, sleep pillows, bath bags and catnip balls; cottage garden herbs, scented and unscented geraniums, English wild flowers, fuschias, dye plants and many varieties of mints and lavenders, all organically grown in compost.



Honeysuckle Cottage 1983 Rose Catalogue, 24 pages, 2 x 27c stamps.

"From late June to October, Honeysuckle Cottage becomes a rendezvous for the growing legion of lovers of old fashioned roses." The catalogue this year lists 183 varieties of roses, some budded in small quantities only for collectors, with others available in large numbers. They include the ancient Damasks, Tudor, Georgian, Regency and Victorian roses, ramblers and climbers, Bourbons, Provence, Chinas, tea roses, hybrid musks, noisettes, rugosas and even striped flowers.

All old fashioned roses are $5.95 at the nursery and will be sent by freight.

MEADOW HERBS

Pauline and Charles Moss, Sims Road, Mt Barker, South Australia 5251. Wholesale and retail nursery. Retail, Saturday and Sunday only, 9 am to 5 pm. Manager, Barbara Graham. Phone 391 1611.

Meadow Herbs has a large range of herbs in pots ready to plant out and also *bonsai* and ground cover plants. The Adelaide Hills bushfires came quite close earlier this year — "We stopped the fires at our boundary fences and so suffered no losses whatever," Pauline Moss tells us.

Mail orders: April to October. Please send SAE for price list.

Meltone's pawpaw flower skin cream.

MELTONE HERBAL PRODUCTS

Melanie and Tony Every, PO Box 489, Atherton, North Queensland 4883. Phone (070) 95 0268.

Melanie and Tony *(Mel-tone!)* make a range of products for natural skin care based on herbs and organic substances and free of animal or petroleum ingredients.

Their handmade skin creams, massage oils, soaps and healing creams have names like Garden Green ice-rub, Mountain Mint skin freshener, or Omeakes concentrated liquid rub (which stands for — "Oh me aches") and may be bought by mail order or at outlets like health shops and markets in Queensland from Atherton to Brisbane.

They live in a 70-year-old farmhouse 10 miles from Atherton surrounded by a lush rambling garden of fruits and herbs, all put to good use as raw materials in Meltone's creams and lotions.

Tony and Melanie are vegetarians and they are proud that they use no animal derived products. "Beeswax, honey and lanolin form the basis of most of our creams," says Melanie. "Where possible flowers and herbs are grown and picked fresh from our own garden, but some oils we have to order. We've taken great care to ensure that every ingredient is ecologically sound."

Mail order: For a catalogue and mail order price form, please send stamped SAE and 20c.

"PATANGA HERBS" NURSERY

Dulcie Rasmussen, 509-525 Stoney Camp Road, Greenbank, Queensland 4124. Large display garden, open most weekends or by appointment. Phone (07) 297 5082.

We are a small nursery still, with my partner Maureen and I building up stock after first the drought, then the heavy rains which followed. But customers are coming in to replenish their devastated gardens. The *nice* ones seem to enjoy having a talk, not only about herbs, but also about our goats (dairy and Angora), donkey, ducks, chooks and cats (all on three acres).

We have: Herb plants — Culinary, medicinal, insecticidal, fragrant and ornamental, scented leaf geraniums, fresh cut herbs (as available), self-sufficiency and fodder plants (as available), herb seeds, plus an ever-expanding display garden. Plants on sale at nursery only. *Sorry no mail orders.*

PENNYROYAL HERBS

Molly and Tony Layland, Mt Arthur Road, Bushrangers Creek, Wellington, NSW 2820 (3km from Post Office). Open 7 days a week, from 9 am to sunset.

We are only a small herb farm, dealing mainly in plants, with over 150 sorts, plus a small range of herb books and herb products such as sachets and pomanders.

We are willing to talk to our visitors about herbs, particularly if they are just starting out and need help. Due to the high cost of freight, we don't get much call for mail order, but we are planning to produce a wide range of herb seeds to help fill this gap.

SHIRON HERBALISTS

Ron and Shirley Haines, PO Box 53, Goodna, Queensland 4300. Phone (07) 288 2981.

We have been going for six years, making up and supplying herbal remedies to friends and locals and also on a mail order basis. Unfortunately, we have had to buy most of our herbs as we only live on a suburban block and our own herbs have mostly been pot grown.

Our specialty is the use of herbs for healing and any readers requiring honest advice from experienced herbalists are invited to send their problem along to us (with an SAE) and we will be pleased to help them to the best of our ability at no charge. Any donations sent will be given to charity.

Ron works at Sinnamon Village Day Centre at Jindalee, doing physiotherapy, occupational therapy and other related work for the elderly.

We are at present looking for a good piece of land, five acres or more, not too far from Brisbane, where we will be able to grow herbs on a commercial scale, and of course our own vegies, and fruit etc. We already have avocados, lychees and other goodies growing in pots ready for planting out.

Herb societies

Please send stamped, addressed envelope when writing.

The Herb Society of South Australia, PO Box 140, Parkside, SA 5063.

Queensland Herb Society, C/- 12 Crag Road, Mt Nebo, Qld 4067. Meetings held at 7.45 pm on the first Monday of each month at the Auditorium, Mt Coot-tha Botanic Gardens, Mt Coot-tha Road, Toowong. Journal *Sage.*

Herb books

Herbs: How to Select, Grow and Enjoy

Norma Jean Lathrop, H.P. Books, Tucson, Arizona, 1981, large format paperback, 160 pages, illustrated. Price $9.95. Distributed in Australia by Tower Books, PO Box 213, Brookvale, NSW 2100.

When people ask me for the best book to help them start growing herbs this is the one I suggest. The reason is primarily the clear, sharp colour photos of the herbs, which you can instantly identify.

"The one idea I'd like to get across is that herbs are *useful,*" says the author. "I'm still amazed by how much my own herb garden contributes to me and my family." A good primer.

Mysterious Herbs & Roots

Ancient Secrets for Beautie, Health, Magick, Prevention and Youth

Mitzie Stuart Keller, Peace Press, 1978, Paperback, 402 pages, illustrated. Price $11.95. Distributed in Australia by Second Back Row Press, PO Box 43, Leura, NSW 2781 (add $1.00 for postage).

Some strange empathy must have been in the air in 1978 because that same year I produced *The Illustrated Earth Garden Herbal,* Mitzie Stuart Keller's book of herbal lore was published in the United States and in early 1979 British art connoisseur Wilfrid Blunt brought out the lavish *The Illustrated Herbal.*

Though using secondary sources, Mitzie Stuart Keller has turned up an enviable range of quotations and woodcuts from the old herbals, covering also those "herbs" such as beets, brussels sprouts, beans, garlic, onions, cabbage and cucumber which many people today think of as vegetables. Exotic information.

Herbal Recipes and Remedies

Margaret George, Skillogalee, Sevenhill, South Australia 5450, 1983 (fifth reprint), paperback, 119 pages, illustrated.

We were delighted to receive a signed copy of this lovely book as a gift from visiting Adelaide friends. It covers 40 herbs, with many recipes and ideas for using them.

"This booklet is written by an amateur, for amateurs," says Margaret George. "I hope you will plant a herb garden and get as much pleasure from it over the years, as I have." Delightful illustrations. First edition was in 1978 too! We don't know the price of the book, but suggest you send SAE to find out.

The Illustrated Earth Garden Herbal

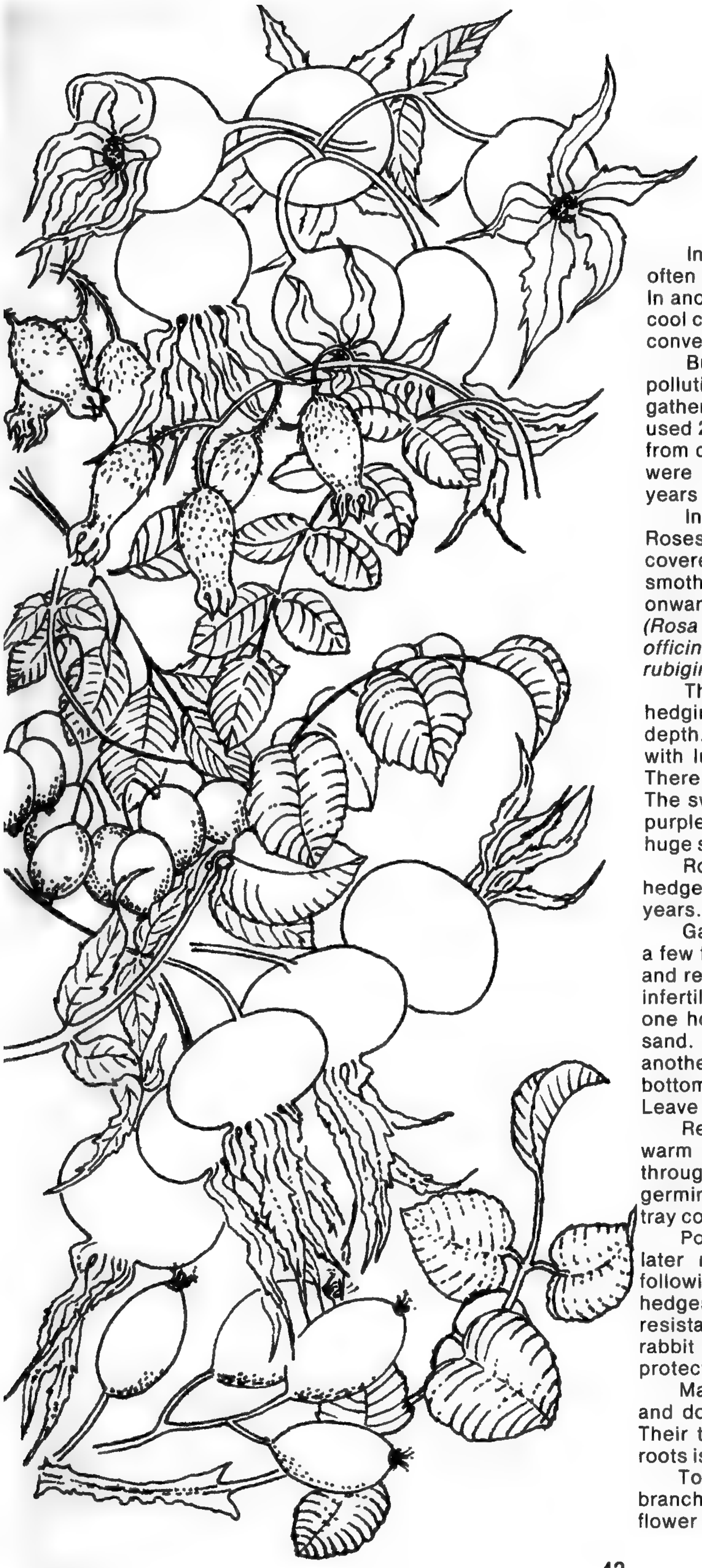
Text and illustrations gathered from ancient sources and the classic herbals

Keith Vincent Smith, Nelson, Melbourne, 1978, paperback, 157 pages, illustrated. Price $9.00 posted, from Earth Garden, PO Box 378, Epping, NSW 2121.

I like herbs and herbals (the old books about them) so much that I wrote a book about them, using the original works where possible and facsimile editions and microfilm.

The result is a quality book with 120 woodcuts, looking at 40 herbs through the words of the ancients like Dioscorides (60 AD), Pliny the Elder (77 AD), the beautiful *Juliana Anicia* manuscript of 512 AD, and the classic herbals by John Gerard (1597), John Parkinson (1629) and Nicholas Culpeper (1653). A lovely gift for herb lovers.

— *Keith*



Rosehips

By Judyth McLeod

In late autumn, the roadsides of southern states are often bright with the brilliant scarlet hips of wild roses. In another age I would have chosen to go collecting on cool crisp mornings from amongst such abundance and converted the spoils to rose hip tea, jams and syrups.

But our beautiful mountain is still subject to pollution. Lead from car exhausts make roadside gatherings unwise, and until recently the local council used 2,4-D with gay abandon. Admittedly, being remote from council chambers, visitations by council workmen were rare — only one spraying that I know of in five years for noxious weeds. But who would want to risk it?

Instead we chose to grow our own roses for hips. Roses can make splendid impenetrable hedges, covered with fragrant flowers from spring to autumn and smothered with Vitamin C rich hips from autumn onward. Classic sources of rose hips are the dog rose *(Rosa canina),* the Apothecary's Rose *(R. gallica officinalis),* and the eglantine or sweet briar *(R. rubiginosa).*

The Japanese rose, *R. rugosa,* is the best of all for hedging often growing 2-2.5m tall and 2m or more in depth. It is the closest of all to the "disease-free rose" with luxuriant foliage which colours richly in autumn. There seems to be never a sign of blackspot or mildew. The sweetly scented white, lavender or deep crimson-purple blooms are followed by a spectacular display of huge scarlet hips like small apples.

Roses are easy to raise from seed. With patience a hedge of substantial proportions can be grown in three years.

Gather very ripe hips in late autumn preferably after a few frosts have softened the fruit. Split the fruit open and remove all the larger seed (fine seed is likely to be infertile). Prepare a tray of soil (preferably sterilised for one hour in the oven) and cover with a layer of clean sand. Scatter the seed over the sand and cover with another sand layer. Water very thoroughly from the bottom, drain, and seal the tray in a polythene bag. Leave in a refrigerator for 12 weeks.

Remove the tray in the spring, water, place in a warm position and seedlings will commence coming through the soil by about the tenth day. They will keep germinating for about 14 more days so don't toss the tray contents out.

Pot up the individual seedlings in small pots first, later moving them into larger pots. Plant out the following spring, watering well until established. Rose hedges are remarkably tough and drought and frost resistant once established. But don't plant them out in a rabbit plague! Not even all those thorns are adequate protection against starving rabbits.

Many hedging roses can be propagated by cuttings and do better on their own roots than budded plants. Their tendency to sucker when growing on their own roots is highly desirable when being grown as hedges.

To take cuttings, select recently flowered branches, count back to the third leaf below the finished flower and cut cleanly diagonally across the stem just above the third leaf and sloping downward away from the leaf. Make a similar cut approximately 25cm below the first cut preferably just at a leaf junction *(node)*. I usually have good success without resorting to hormone rooting powder and place them in a 50/50 sand/peat mix arranging them around the rim of large pots and burying them for half their depth. Keep watered particularly in dry weather and most, if not all, cuttings will have taken in about two months.

Roses grown as cuttings have a reputation of being less strong than budded plants. But of course people forget that the root system of a budded plant is about two years old when sold. I usually place well-rooted cuttings in large pots and grow them on for one year before planting out. Treated this way the older and species roses are usually fully as vigorous as their grafted counterpart, if not more so.

There are some lovely varieties of the hip roses to be had and they are worth searching for. All can be propagated from cuttings to multiply your original purchase.

The Penzance briars were bred by Lord Penzance in the late 1800s as a hobby. There were some sixteen of them originally, bred from sweet briar, and most named after heroines in Sir Walter Scott's novels. Lady Penzance bears masses of single soft yellow blooms tinged with pink and having a boss of delicate golden stamens. The dense green foliage has the same sharp sweet fragrance as the eglantine from which it was bred. On a warm still day or after a spring shower the fragrance is carried far and wide. Masses of small oval hips follow the spring display.

There are many lovely rugosa varieties but only the single forms set many of the huge desirable hips. *Rugosa alba* has large single white sweetly-scented blooms followed by a spectacular display of huge tomato-coloured hips. *Rugosa rubra* has large single blooms of deep, deep crimson-purple followed by a magnificent display of hips. *Scabrosa* has lovely sweetly-scented lavender blooms followed by masses of large holly-red hips set against lush glossy green foliage.

Two other roses deserve a special mention for their hips. Wedding Day is a climber which literally buries itself in a great white cloud of large single white blossoms and golden stamens in late spring. The fragrance is deliciously fruity wafting a great distance. The flowers are followed by masses of large red hips.

Pomifera Duplex which goes also under the names of Apple-Scented Rose and Wolly Dod's Rose is a gracefully arching bush covered with clear pink semi-double flowers in spring followed by large crimson hips. The marvellous thing about this rose is the delicious green apple fragrance of the foliage.

At our herb nursery "Honeysuckle Cottage" we sell lots of rose-based delights.

Rose hip jams, syrups and confections are always popular. Here are some delicious concoctions that we have often enjoyed.

Rose Hip Syrup

1kg ripe rose hips
raw sugar
1½l water

Clean the fruit and remove the leaf-like calyx from the top of each hip. Mince the fruit coarsely, place in an enamel pan and cover with 1½ litres of boiling water. Bring to the boil, turn back the heat and simmer very gently for 15 minutes. Strain. Measure the juice and to each litre add 700g raw sugar. Gently heat while stirring until the sugar has dissolved. Pour into clean bottles, loosely screw the lids on and simmer in a water bath for 25-30 minutes. Remove and screw the lids tight. Store in a refrigerator once opened.

Sauce Eglantine

This was reportedly a great favourite on the menu at Balmoral in Queen Victoria's time — which is not surprising as it is delicious with lamb. Slit each hip in half lengthwise and remove all the seeds and fine bristles. Puree or blend with a little water, sugar and fresh lemon juice to give a thick saucelike consistency.

Rose Hip Conserve

0.5kg rose hips
1 cup water — or multiples thereof
sugar

Prepare the hips as for Eglantine Sauce. Place hips and water in an enamel saucepan (stainless steel is next best), bring to the boil, turn the heat back and simmer gently until the fruit is soft. To each 1kg pulp add 1kg of sugar. Bring to a rolling boil. Test a drop on a cold saucer. When a drop sets, remove the conserve from the heat and bottle in clean glass jars.

A fussier version for special occasions is made by cutting off the tip of each hip and cleaning out the seed and bristles with a hooked wire crochet hook. Rinse several times in water. Blanch the berries by pouring over boiling water, bringing back to the boil and immediately turning into a colander and pouring over ice-cold water. Prepare a syrup of 1.5kg sugar with ¾ cup water. When thickened, add the hips and simmer until tender. Skim off any scum. Seal in clean glass bottles.

Invert each bottle once or twice daily for three days to ensure that the hips are filled with the syrup. This produces a delicious whole berry conserve. Honey can be substituted for sugar in each recipe but store in the refrigerator to lengthen the keeping time.

Rose Hip Tart

A 17th century dish with much to recommend it is a closed tart with a filling of rose hips prepared as for Sauce Eglantine flavoured with cinnamon and ginger sweetened with honey or raw sugar. Sprinkle a little raw sugar over the top of the tart before baking. A few pastry rosebuds make a final touch for a very special autumn delight.

Rose Hip Jelly

Wash the hips in clean water, remove the calyces if necessary, place in an enamel pan and just cover with water. Bring to the boil, turn back the heat to a simmer and cook until the hips are tender. Strain overnight through a jelly bag. For each cup of strained juice add one cup of sugar and bring to a rolling boil. The jelly is ready when a few drops on a cold saucer wrinkle when the tip of the finger pushes the surface after a 30 second wait. Skim off any scum and pour into clean screw-cap jars. This makes a delightful ruby jelly that is like a precious jewel when held up to the sun.

As you can see, rose hips were variously used for "banketting dishes as tartes and suchlike; the making whereof I commit to the cunning cooke, and teeth to eat them in the rich man's mouth." They have time honoured use in jams, syrups and jellies, often in combination with other autumnal hedgerow berries, and these were treasured through cold European winters for their rich content of health-giving Vitamin C.

Land lines is a free service for Earth Garden readers who wish to buy, sell, lease, caretake or look for land. It is not a lonely hearts column.

Readers must give their full surname and address as proof of their sincerity. They have the responsibility to thoroughly check all deals. Please keep listings to 50 words or less.

In October we will have two cabins on several acres available to let in a secluded, picturesque valley near Wellington, NSW. There is an established garden with ample water and a small orchard free of fruit fly. Rent will be negotiable around $25.00 per week for each cabin. Would suit two couples willing to share simple lifestyle.

Phone (068) 46 7296 after 7 pm, or write: Ida & Geoff Strain, PO Box 286, Wellington, NSW 2820.

We have for sale 25 acres of natural coastal forest in the foothills near Moruya, southern NSW (30km south of Batemans Bay). The land gently undulates with a large natural clearing suited to building. Electricity and phone available. Easy access to town and surfing beaches only minutes away. We are asking $29,500 ono.

Regards, David and Gail Allen, 25/163 Belmore Road, Riverwood, NSW 2210. Phone (02) 534 1251.

land lines

BLOCK RAM

We are sure someone out there must have a block ram excess to their requirements. Some years ago we used one in Papua which made a block the same size as a standard concrete block, 16ins x 8ins x 8ins. This size would be ideal but doesn't seem to be made anymore. We aren't that fussy, however and if we could buy, trade for, or hire one on a relatively long-term basis, we could get started on our home.

Regards, Garry & Brenda Staples, 139 Mardells Road, Central Bucca, NSW 2450. Phone (066) 53 6868.

Farmlet blocks for sale close to Warialda, north NSW. Good new road for access, power and phone available. Sizes range from 150 to 170 acres, prices from $20,000 to $25,000. Terms available from vendor. Healthy, mature timber on all blocks for building. Dams on all blocks and some have creek frontage.

For more info, please ring Sally Gambell on operator connected OBX creek 271, Grafton area, or write 'Settlers Farm', Old Glen Innes Road, Buccarumbi, via Grafton, NSW 2460.

Can you help us? We are a couple aged 29 and 27, with two little girls, 3½ and 2, who are searching for some acres to buy completely out of chemical spraying areas. This is very important to us due to chemical sensitivity developed after heavy exposure to orchard and weed sprays. The possibility of gardening and establishing a large orchard is essential.

We're all vegetarian, love the bush and have good experience in gardening, beekeeping, non-polluting lifestyle. Is there a place near you, or some area that you know of that might suit us?

Sincerely, Kym & Janice Gregory, Wayside, Flinders Chase, Kangaroo Island, SA 5223.

Our beautiful mountainside property in beautiful area for sale. Multiple occupancy or two shares (two houses, separate entrances), or instant income renting one (no problem here!). About 1/5th of 57 acres cleared, rest semi-rainforest, self sufficiency established. Sell to organic-minded people only for total $100,000.

Write: Pauline & Jim Williams, C/- PO Nimbin, NSW 2484. Phone (066) 89 1484.

Male, 35, has lived an alternative lifestyle in the Mullumbimby area of NSW from 1975 to July 1981 when I said yes to the right of Jesus Christ to control my life. Still keenly interested in permaculture, soft technology, organic living and would like information from any community whose life is firstly centred in Jesus. Would also like to hear from any brothers and sisters interested in forming a Christian co-op or hamlet type community.

Peter Cottrell, 27 Terrace Street, Kingscliff, NSW 2487.

Mogo, south coast NSW, partly complete two bedroom cottage on ¼ acre block with town power and water. Option to buy adjacent ¼ acre. Septic installed. Begun in stabilised rammed earth, possible to finish in conventional materials. Price $8,500.

Contact L. Fuller, C/- PO Mogo, NSW 2536, or Phone (044) 71 7548.

Land for sale, Ballarat, Victoria, 40 acres of undulating, fenced, bushland. Building permit, power and water available. One hour to Geelong. Backs onto State Forest. Access road. Price $80,000.

Contact Peter Maloney, 32 Heytesbury Street, Herne Hill, Geelong, Victoria 3218. Phone (052) 21 7453.

I'd be interested to hear from Christians (especially any in communities) or families about the spiritual battles and adventures they've had in 'going bush'. I'm mainstream Protestant, Church of England upbringing, now going to a Baptist church.

Heather Chamberlain, 81 Emma James Street, E. Gosford, NSW 2250.

Land wanted, New Zealand or Tasmania. I am a single man (temporary I hope) in my late 20s. I am interested in self-sufficiency, organic gardening and mudbrick houses. I would like to buy a block of land in the South Island of New Zealand (preferably in the Canterbury district, but this isn't essential) or on the east coast of Tasmania. Minimum of 5 acres, upwards, or I'm willing to share land or join a co-op.

Land must be suitable by council regulations for building a mudbrick home and have a permanent water supply or good rainfall. I intend to grow my own fruit and vegies and have some bee hives. Hope some Earth Garden readers can help me. I will reply to all letters.

Please contact Gary Ey, Box 169, Paraburdoo, Western Australia 6754.

Goat dairy, fully licensed and established, cash flow business servicing Queensland provincial city with 40 acres of undulating-to-hilly country, some improved pasture, four bedroom weatherboard homestead, farm sheds, dairy and complete farm plant. Fifty registered does and excellent 'milk line' buck. Currently making good return and lots of room for improvement. Price $250,000, some vendor finance if required.

Further details, Margaret & Bruce Pelvin, PO Box 35, Helidon, Qld 4344. Phone (076) 97 5131.

We are founding a Medieval Village in the Blue Mountains and would like to hear from people interested in establishing a self-sufficient community to be set in the style of the 12th-15th centuries. It will consist of a Tollgate, Great Hall, Inn, cottages with art and craft shops, farmlets and anything related to that period. We have the land, it is in the wilderness but is within easy reach of schools, transport and shops and is not too far from Sydney. We are looking for people who might like to join us in this project. No drugs.

J. Martin, 26/102 Spit Road, Mosman, NSW 2088. Phone (02) 969 1398.

We are a young couple (20s) looking for reasonably priced land in a high rainfall area, preferably in the Lismore-Nimbin area of north east NSW, on which to establish energy self-sufficiency with wind, water, solar, methane and alcohol in line with the permaculture concept. Ideally, we're looking for 50-100 acres+ of shelf country with good water and some rainforest, preferably without a dwelling, as we plan a Tyrolean style timber home. We are both from farms on the NSW north coast and not deterred by steep or 'dirty' land or unsealed roads. We look forward to a quick settlement.

Andy & Toni Usher, 52 Terania Street, Lismore, NSW 2480. Phone (066) 21 6453 (after hours).

We are a family of four, interested in the simple life, but not into communities based on any religious beliefs or involved in illegal drugs. In late December/early January, we plan to drive from Brisbane to Victoria. We would appreciate making contact with communities along the way who are interested in potential new members.

Please write to Anne and Peter Wighton, 5 Stowell Street, Collingwood Park, Qld 4301.

For sale: 40 acres Cooloola Coast hinterland, 20km north of Gympie, Qld. Well timbered, with two cottages and a sleep-out, ideal for dual family or share farm, with small lake and three dams. Pressure feed water to cottages and garden, plenty of fruit trees, big vege and herb garden. Power on land, phone available, school buses. Just one hour to Rainbow Beach, Noosa and Nambour. Has running creek dividing property, front and rear entrance and connecting bridge. Must sell, $50,000 ono.

Write Carey Grace, MS 316, Gympie, Qld 4570.

My wife and I are seeking the opportunity of taking advantage of the generosity of someone out there, anywhere, who would give us the chance to work, to live, to learn a self sufficient lifestyle. We are very responsible, vegetarian, non-smokers and don't own a TV.

Liddy & Peter Maloney, PO Box 1124, Townsville, Qld 4820.

Most beautiful pise (rammed earth) home in a 640 acre community co-operative near Maleny, south-east Queensland, Sunshine Coast area. Land is near Headwaters of the Mary river, with rich river flats planted with citrus and frost free rolling hills with tropical orchards. We also have about 40 horses grazing on the land. The community now has 30 adults and a dozen children. There is a share system: not one person owns a particular piece of land, but everybody owns the lot, although the area round your house is your responsibility. The house is about 85 sq metres, plus large verandahs, all wired 12 volts with solar panel, established gardens. Price $10,000.

Contact Marc & Juliette Kalifa, 'Crystal Waters', Maleny, Qld 4552. Phone (071) 94 4580.

Land for sale: Mid north coast, Bowraville-Bellingen, NSW. Our 540 acre community has 60 acres of land left for sale. Backs onto State Forest and Nature Reserve. Land has ridges, flats, springs in ground for permanent water and lots of forest. Sale comes with own title and price includes legalities.

Ray Bove, Orecoo P/L, Bellingen Road, Bowraville, NSW 2499. Phone (065) 64 7453.

We are a couple in our mid 20s looking for other people to share land in southern or east Gippsland, Victoria. We to take part in an already existing community, or form a community of like minded people in order to buy land. We believe in regional self-reliance, on a permaculture basis. We have already started planting useful species seedlings in drums and intend building low cost, low energy housing, probably mudbrick. Our interests are wood and metal work, crafts and community involvement.

Interested people or communities can contact us: Philip & Meredith Smith, C/- PO Orbost, Victoria 3888.

Wanted: Information on the Mudgee area of NSW. We would like to move there in the next two years or so but would be interested in hearing from people with land for sale, or preferably a mudbrick house and a few acres for sale. Any information or suggestions on planning our move would be appreciated.

Susan Mathieson, 49 Francis Street, Bairnsdale, Victoria 3875.

Is there anyone who would let me learn on their farm? I am a good worker for my keep. I am 21 and would dearly love to get the experience so that I may get my own place. At the moment I am doing a painting course at Victorian College of the Arts which will finish by December 1.

Bruce Hawkins, 22 Herbert Street, Ringwood, Victoria 3134. Phone (03) 870 5621.

Lovely old timber cottage on half acre for sale on outskirts of Manilla, NSW, 20 minutes west of Tamworth. This area is good for fruit and veges. Cottage is in good order and has one bedroom, lounge, country kitchen, bathroom and laundry. The price is $15,000.

Ring and ask for Jim Blackwell on (02) 46 3806, or write: 1/302 Pacific Highway, Lindfield, NSW 2070.

We'd like to sell our two bedroom cottage set high on 14 acres, with three acres cleared around the house, the remainder rainforest. Very pretty, gentle north east slope, abundant flora and fauna. We're about three miles from Lake Cootharaba on the Noosa Lakes. It's got quiet beaches and is perfect for sailing, fishing or just messing around on the river. Asking price is $50,000.

Enquiries, please phone (071) 85 3195, K. Fraser, 13 Cootharaba Road, Boreen Point, Qld 4568.

An old brick railwayman's cottage for sale on the outskirts of Manildra, about four hours' drive west of Sydney. Cottage is on a one acre block and has three bedrooms, lounge, kitchen and bathroom, with power and town water. I am asking $15,000.

Write or ring Doug Blackwell, 67 Macquarie Street, Chatswood, NSW 2067, or (02) 411 4563.

House for sale on Dangar Island on the beautiful Hawkesbury River, four bedrooms fully renovated, open fireplace, also self-contained cabin, all this fronting a sandy beach, you can fish and swim virtually from your garden. We have town water, electricity and phone. There is a short ferry ride to the mainland and then it takes 50 minutes to Sydney by rail. Large block with fantastic organic garden and bush house. We are asking $145,000.

Tony and Fran Daly, C/- PO Dangar Island, NSW 2253. Phone (02) 455 1593.

Live in the country — and you are still close enough to civilisation should you need a job — only 15 minutes' drive to Albury, NSW or Wodonga, Victoria. We are selling our two adjoining half acre building blocks in the township of Howlong. Electricity, town water, telephone available. We are asking $6000 each or $11,500 for the lot.

Phone (060) 24 1852, or write to I. H. Zangerl, 38 Leonard Street, Wodonga, Victoria 3690.

Shares for sale: A New Age spiritual community is in the process of birth, located on 1,449 acres in the Great Dividing Range, near Warwick, Queensland — 8.1km up North Branch Road, Maryvale, Cunningham Highway.

For comprehensive information, contact: W. P. & J. Shelley, PO Box 403, Warwick, Qld 4370. Phone (076) 66 1205.

On a recent tour of the east coast, my wife and I went to Grafton, NSW. We liked the country up there and decided to buy some land (10 to 50 acres) in the price range of $10,000 to $15,000. Unfortunately we ran out of time and had only two days for our search. We saw all the agents, but ended up nowhere because of lack of time.

I am going to visit the area again on my next leave and wonder if any readers have or know of suitable land (must have water) for sale. Bushland or partially cleared land is preferred, maybe a share will be considered. Must have a building permit.

Eric and Renate Honig, 29 Curtin Street, North Geelong, Victoria 3215.

For sale, ½ hour south west of Grafton, NSW, two blocks, one 35 acres for $35,000 and the other 83 acres for $48,500. Each has frontage to permanent creek, flat and steep areas. Secure rainfall and long growing season. Block 2 has a small cabin, phone, 20 acre irrigation licence and a house being constructed, with permits, etc. Block 1 has creek flats, timbered areas and two dams.

Further information from D. Connell, Settlers Farm, Buccarumbi, via Grafton, NSW 2460. Phone OBX Creek 271 (operator connected).

We are looking for a single person or a couple to join us on our 130 acre farm near Launceston, Tasmania. Our land is half paddocks, half bush and has four permanent creeks. We are already running cows, sheep, poultry, goats and bees and are self-sufficient in vegies. We have a little house for accommodation, which could be extended. Everyone is welcome to come and have a look.

Give us a call (003) 99 3419, or write to H. & J. Riedl, Mt Arthur Road, Patersonia, Tasmania 7257.

We are selling our 370 acres of beautiful rainforest and bush. We have ½ mile frontage onto the Ellenborough River, five acres of river flats (part vegie garden) and 50 acres cleared. Rest all natural bush and rainforest backing Great Dividing Range. Price $59,000. We also have a Gibson Mk II Village sawbench, fully hydraulic with a blower, for sale at $8000.

Contact Dave and Loretta Turton, PO Box 216, Wauchope, NSW 2446.

For sale, two shares in lush valley, with hills, on the Atherton Tablelands, 30 acres, part regrowth rainforest, two spring-fed dams, one permanent unpolluted creek, good soil, next to State Forest. Near finished 20ft x 35ft Besser block living shed. Bitumen road frontage, school bus, 6 miles town, builders permits, subject to Council regulations. Shares $4500 each.

Write to R. Ebels, C/- David Lyons, PO Box 202, Ravenshoe, Qld 4872. Phone (07) 97 6371.

At present about 40 peaceful beings reside at Arthaven, an 80 bedroom hotel at Blackheath in the Blue Mountains, NSW, now being established as a New Age Cultural Centre. We aim to increase population to a total of 50. As we have a predominance of males, we require mainly females, especially women inspired by theatre/dance — ideal for single mothers.

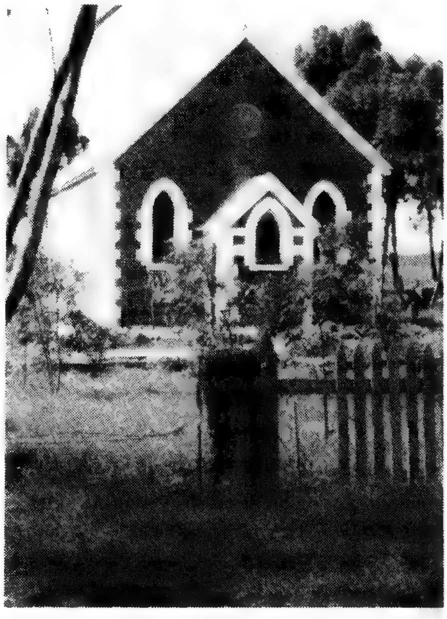
We have qualified residents already in the following areas for workshop guidance: Recording studio, music, theatre, photography (Kirlian), studio painting and drawing, pottery, silkscreen, yoga, meditation, massage, vegetarian food and need more people for the garden to sow along Findhorn methods. Unique opportunities for autonomous, self-sustaining living, media communications and theatre productions, with many benefits in the offing, including rental subsidy. A life time opportunity.

Please contact Lindsay Bourke, Arthaven, Blackheath, NSW 2785. Phone (047) 87 8407.

YACHT LINE

Yacht for sale, 24ft, bilge keel sloop, ideal for cruising Great Barrier Reef and Queensland coast. Fully fitted for living aboard in comfort. Designed by Alan Wright, this yacht is strong and safe. She has cruised from Sydney to Cairns, then Papua New Guinea and the Solomon Islands and back to Australia. British registered, four bunks, full size chart table, extensive storage, two burner meths stove, insulated cabin, recently repainted and anti-fouled. Loads of equipment, 8 hp and 2 hp motors, stereo cassette, solar shower, navigation gear, etc.

For full details and photographs write to Geoff Wright, C/- Post Office Cairns, Qld 4870.



Struggling to establish my new shop, Back to Earth — Naturally (EG38, page 7) at Gladesville (Sydney), I find we really need someone of *Earth Garden* intelligence who understands and could help explain to prospective customers about the mysteries of alternative energy, solar panels, electric fences and Bio-loos and so on. Also to be involved, even on a part-time basis, with promoting this much needed venture and letting people know about it. I've spent many hours doing the spadework already.

Contact Bev Mullany, 173 Victoria Road, Gladesville, NSW 2111. Phone (02) 89 3335 during business hours.

The last three shares are for sale at $15,000 each on our 300 acre property on the north-east slopes of Mt Warning, bordering the National Park. Four shares are already taken. This is a challenging piece of land, requiring people with a strong pioneering and practical sense. There is plenty of pure water, forest and good soil. Phones are connected, but there is no electricity. A four-wheel-drive vehicle is essential.

David Butler, 'Derrilin', Eungella, via Murwillumbah, NSW 2484. Phone (066) 79 3266.

Tasmania, north west coast, commanding coastal position in mild, frost-free climate, sound old four bedroom weatherboard farmhouse in ½ acre of hedged gardens. Comfy, sunny disposition with all cons, open fires on quiet, no through road, 2km from Stanley, 200 metres from beach, 20km from airport. Established trees, fruit trees, veg garden, chook run, good soil, with 45 inch rainfall. Price $38,000, part finance available. Adjacent 30 acres for sale, other land leasable nearby (cheap).

J. Russell, PO Stanley, Tasmania 7331. Phone (004) 58 1258.

GALLERY FOR SALE

For personal reasons, I have decided to sell my art gallery, home and two acres of garden in a beautiful setting right on the main road at Burra, 90 miles from Adelaide. The gallery is in a lovely old church and the house in the former school hall. It would especially suit young people wanting an alternative lifestyle without too much "culture shock" to begin with. Please send SAE for details. Price $38.000.

Judith De Hrabeczy-Humphrys, Hanson Gardens Gallery, PO Box 98, Burra, SA 5417. Phone (088) 93 5026.

Stan Humphrys was born in London in 1908 and came to Australia in 1964, settling in Burra, where he was tragically killed on the road in 1982. His paintings of Australia show how close he got to the land in the dry parts of South Australia.

A set of four full colour prints of Stan Humphrys' landscapes are available from Judith for $7.50, plus $1.00 postage.

Laying out a farm

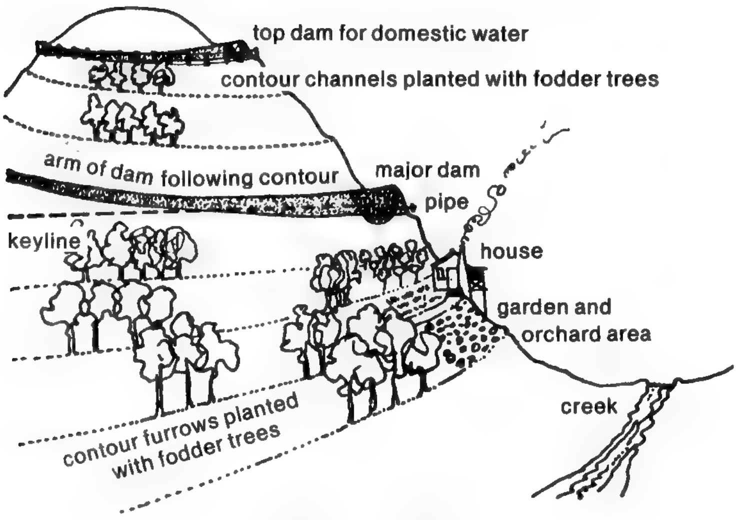

top dam for domestic water
contour channels planted with fodder trees
arm of dam following contour
major dam
pipe
keyline
house
garden and orchard area
creek
contour furrows planted with fodder trees

Figure 1 — profile.

By John J. Alderson

1. The Ideal

It is not sufficient to buy a property and imagine that by settling on it all your problems have been solved.

In the final analysis every property has to make ends meet and regardless of the size of the property, this means it has to be run efficiently. This means proper design.

People seem to be divided into three types: those who automatically build their house on the highest point of the land, those who build in the most beautiful clump of trees and those who build right on the roadside. The first is never a good site. The second usually ends up destroying most of the trees in any case. The third is never a good site.

There are plenty of good reasons against these sites. On a farm with the house at the top of the hill everything has to be carried up to it and this means energy. The most important item on any property is the water supply and most of the water is used in the garden and around the house. Pumping water is an expensive and frustrating business, especially when the engine and pump start getting old and, regrettably, this is often after only a month or two.

Hilltops are usually dry and have poor soil (not that this will worry a good gardener) but they are a fire-trap. A bushfire will race uphill in minutes. Not only that, but hilltops are exposed to all the weather and insulation and heating/cooling expenses are going to be high. With a farm struggling to make ends meet a hilltop house site will cause problems by its extreme inefficiency.

Building amongst the trees might be all right. Utilising the trees is most sensible. Unless the site is right in all other respects don't build there. Almost certainly the trees will be eucalypts, bad trees to have near a garden and usually with a proneness for falling limbs and a prey to fire and lightning strike. The trees will be beautiful, even if the house isn't built near them.

The roadside house site is too silly for words and only about 60 per cent of people use it. Roads are a great hazard for chickens, ducks and poultry of all kinds, lambs, calves and children. The traffic noises, dust and exhaust fumes will keep the city refugees nostalgic for the suburbs of their childhood. On the roadside you'll even have to get a permit to paint your garden gate.

Contrary to popular belief, possession of a piece of land does not automatically provide either an income or a living. It is the means of getting these things. The better it is laid out, the easier it will be to work, the less time will be spent on mundane matters and the more efficient the property will be.

There are and must be priorities and several of these must be fulfilled before the site for your house is chosen. The house must fit in with the farm; it is foolish to try to fit the farm around a badly sited house. If there is a house there already and it does not fit in with these priorities it will be cheaper in the long run to shift it rather than muck around.

All farm produce is dependent on two things — soil and water. The soil does not greatly concern us here, but the water does. Given a good water supply, virtually any soil will grow food, but without water, the best soil in the world remains sterile. Water is thus our prime concern. Most people are conscious of this and usually try to conserve all the water they can, generally by putting in a large dam on the lowest point of the property. From this, every drop of water used has to be pumped! The irony of it is that most of the water will flow off the property in any case.

While allowing that the maximum amount of water should be conserved, it is most important to have it at as high a head as possible. To illustrate this, I'll start first with an ideal situation and try to explain how to adapt the ideal to rather less than ideal situations. Incidentally, the principles do not alter whether we are working with five or 5,000 hectares.

The normal or classic landscape is in profile an elongated S (see *Figure 1*). It will be easier to consider the S reversed, the top curl being the hilltop and the bottom curl being the gully.

The important point to find on this slope is the *key-line*. This is the point where the top slope merges into the bottom slope. It is easily detected by eye and would normally be about halfway up. Somewhere on a contour line running through this point is the site for the dam, the major holding dam on the property.

All other things being equal the dam site would be in the centre of the property. Of course all use should be made of minor gullies, which might make the excavation of the dam easier and cheaper. Obviously the dam ought not to be sunk on an outcrop of granite, though in the right circumstances, a few tons of dynamite might work out cheaper than a bulldozer.

On such a site the dam will normally be long and narrow, the cheapest form of dam there is to build *(Fig 2)*. The arms of the dam are extended, along the contour, to the edges of the property. If the property is large the contour banks should rise, after a reasonable arm for the dam, on a slope of one-in-600, that is, one inch in 25 feet.

If the area is an isolated hill the contour bank can go and should go right around and meet on the further side. However, on properties of this magnitude, it would be cheaper to build several dams on this contour. This contour and bank has to be substantial. It should, regardless of the size of the property, form the major crossroad of the farm and preferably one of the arms should form the main access road to the house. It is also the division of the farm into the upper 'dry' area and the lower 'watered' area and will require a fence.

If a lot of stock movement is expected (if it's a sheep farm, for instance) the top of the bank may best be fenced into a laneway. On a smaller property the water would probably extend right across and would itself form one fence of the lane.

The area above the dam should be contoured, the banks rising away from the dam at the slope of one-in-600 so that the flow-off of water is directed into the dam. Special provision must be made so that no erosion takes place.

These contours will probably be made by a single furrow of a plough, the soil being turned uphill. This actually gives a double contour and allows much more water absorption. Be it noted that we are working for the absolute maximum use of the water, getting the ground to absorb as much as possible and collecting the run-off in the dam. To this end the soil ought to be chisel-ploughed on the contour with the same rise as the banks.

This upper area is grazing country and all upper slopes should be planted to trees. Along the contour furrows you should plant carob, honey locust, algaroba bean and cork oak, all of which drop seeds which livestock will eat. Other trees which have to be lopped, or which the livestock can crop are acceptable. If it's a small property and poultry are the main livestock, a vast range of seed and fruit bearing trees can be added. See *Fodder trees* (Earth Garden 35, page 38) and *More fodder trees* (EG36, page 48). Here we are dealing with farm layout, not development.

If a large supply of good clean domestic water is needed, then an area of the top of the hill has to be fenced off, a dam sunk and the water piped to the house. It is advisable to add drinking troughs for the animals if such a dam is put in.

To be frank, one of the reasons for having the livestock on the hill area is so the manure will, at least in part, be washed into the dam. This dam, with the fish in it and the ducks on it, will be liquid manure, which is magnificent for the garden but could carry parasites that would affect the animals.

The area below the dam is also contour ploughed, but this time the contours fall away from the centre to the outside of the property at the same slope of one-in-600, a slope which allows a sufficient flow of water without causing soil erosion. From a simple pipe in the dam bank with a gate on it the entire lower area of the farm can be watered by gravitation.

The obvious place for the vegetable garden and orchard is directly below the dam though it could be anywhere on the lower part of the property. However, as the normal place for the house is very close to the garden and as the fish are in the dam and the ducks on it and the chooks on the other side, the house is best situated below the dam. Perhaps, if the dam is huge, it can be to one end of it or you'll need a boat to collect the eggs! The access road, as mentioned, is along the bank of the dam and its extended arm.

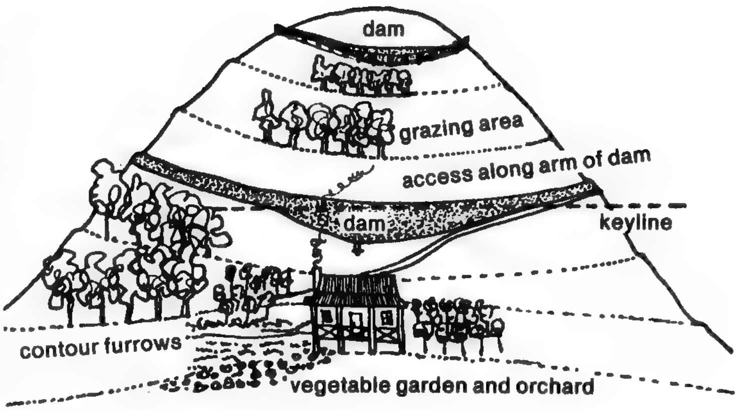


Figure 2 — front elevation.

The lower area of the farm, below the dam, is for more intensive cropping.

The distance between the contour furrows is determined by what is to be done with the land. The contours should be planted with some sort of trees, preferably legumes, if the land is to be cropped or heavily grazed. It is — or should be — absolutely unthinkable not to have a good tree cover on the land. Even for someone with 50,000 acres devoted to wheat there is still no excuse, though the distance between the lines of trees might be determined by the width of the farmer's pneumatic seeder. If it covers 72 feet the lines of trees might have to be 150 feet apart.

Dams in this lower part are of minor importance, serving for stock water or fish farming or growing water lilies.

One other type of dam needs to be mentioned. This is the saddle-dam, built between two hills, usually with a bank either end with contour arms extending right around the hills, or sometimes even around further hills. These are the highest dams and give water at the greatest head. They are reputed to be the cheapest to construct and they are usually quite large.

To sum up. In the ideal situation the major dam is placed in the centre of the property with access along one of its arms. Above is a grazing area covered with fodder trees. The house lies below the dam in the centre of the most intensive water and land use. The lower part of the farm is watered from the dam. All the property is laid out with contour furrows falling the appropriate way depending upon their position.

I hear you all sigh. So few of us have ideal properties. However, when one has an ideal, circumstances can usually be bent to conform to a reasonable approximation of that ideal. To illustrate this it is best to consider the development of some different properties.

Part 2: *Fitting the Land to the Ideal* will be in *Earth Garden 40,* out in November.

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Sustain us! Fill out the order form on page 58.

Against roos & rabbits

By Terry Burgess

It's a continual battle to protect our crops and trees against creatures as cunning though even less intellectually endowed than ourselves — and it can be a humbling one. Who among us humans would risk our lives for a tasty snack?

Faced with such persistence the task of protecting our food crops needs to be studied well. This article is the result of my homework so far.

As far as I've been able to discover, kangaroos and rabbits have very similar tastes. It's a generally reliable assumption that tender green shoots of any plant will attract them, as will the bark of young fruit trees. Native shrubs and trees planted out in a region where they don't occur naturally need protection, especially if planted in an exposed position.

Prickly plants like cactus and pomegranate are safer, but unless the spines are thickly distributed, the non-prickly parts are likely to be nearly eaten. Pomegranates and hawthorns seem to repel kangaroos by their hidden spikes, though both probably need protection from rabbits while they are young. Roses, despite their thorns, aren't safe at all.

Most exotic plants are regarded as tasty tucker, for example, most shrubs, geraniums and succulents. Exceptions are bulb plants, such as agapanthus (Star of the Nile), belladonna lilies and irises, which are quite safe without any protection. All of these are drought resistant and useful supplements to a firebreak.

Rubber

Rabbits have a keen dislike for rubber, so old car tyres or cut up rings from inner tubes placed around plants are enough to repel them.

This can be a good 'insurance' policy against

MAKE A DRUM CUTTER

"44 gallon" drums: These are a good protection against both rabbits and kangaroos and may do the job more cheaply than wire mesh. You will save money by buying drums in bulk, say 100 at a time.

Removing the tops and bottoms of the drums may be a problem without the right tools. A long-handled engineer's hammer (a good investment) coupled with a cutting tool made from an old car spring is a good combination.

How to make it: Take a piece of old car spring (leaf type) and sharpen along half its length. Bind the unsharpened part with inner tube rubber to form a comfortable grip which will stop your hands being jarred while cutting through the tops and bottoms of the drums.

The piece of car spring leaf will have a slight curve which can be sharpened to make the tool suitable for either left or right handed people.

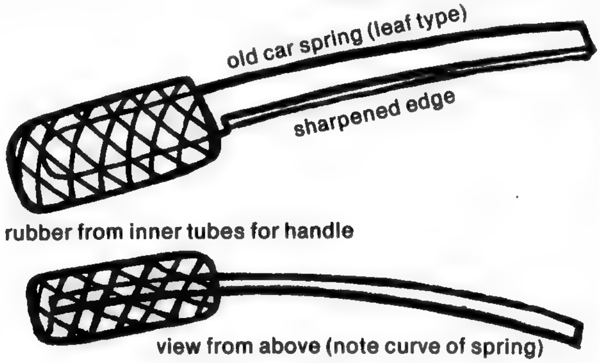
To use the drum cutter: Grip it firmly and hold against the rim of the top or bottom of the drum at an angle of about 30 degrees. The rim will serve as a guide for the cutter.

After each hit on the top edge of the drum cutter, draw it towards you and take another bite. The technique is similar to opening a can with a chisel and is easily mastered. After some use the bastard (top) end of the drum cutter will become heavily burred and will tend to jam, so you need to grind it regularly or hammer off the burrs.

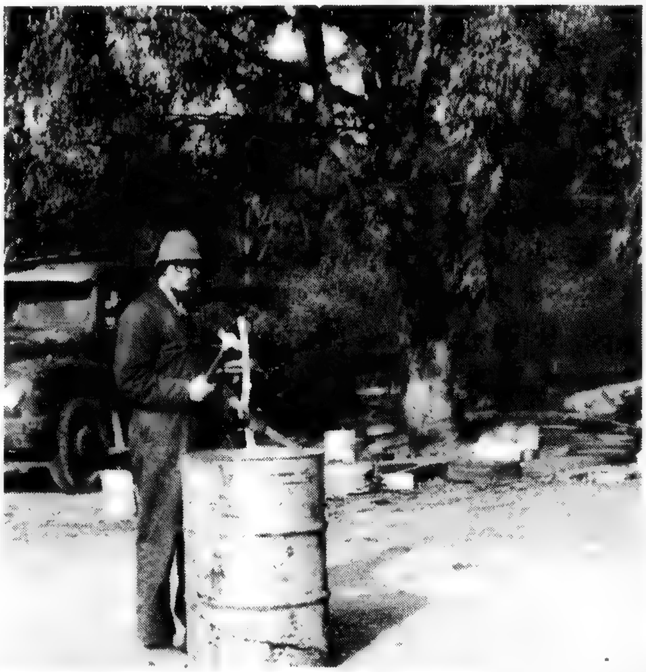
Opening drums this way is quick and also great for getting rid of frustrations. Almost any problem you meet can be overcome by bashing harder!

The drum tops and bottoms need not be wasted. With a little bit of ingenuity they can be used as woodshed or chook house cladding and so on. I am using mine at the moment to kill some weeds the lazy way — spread over a weed infested patch.

The drums have an advantage over wire mesh tree guards because they also provide some protection for the plants against drying winds.


old car spring (leaf type)
sharpened edge
rubber from inner tubes for handle
view from above (note curve of spring)

Drum cutting tool.



Recycled 44 gallon drums protect young ornamental shade trees around the partly-built house.

rabbits if you have fenced in an area to establish an orchard or garden and you aren't sure whether all the rabbits have been eliminated.

Inner tubes may also be cut into wider rings and half buried in the ground to protect plants such as wattles grown from seed on location. They protect the tender seedlings from wind and are an aid in watering.

Kangaroos, on the other hand, are not at all averse to rubber and will happily and neatly chew the trunks of fruit trees grown in car tyres.

Wire mesh

If you are using wire mesh, try to obtain it as scrap from a rubbish tip, or buy it in huge, loose rolls (usually with the bottom third of its width rusted). In this condition wire mesh may often be bought cheaply at clearing sales and can still be reused effectively.

You will save more money if you don't use 'star' steel posts or bought wooden stakes and instead use bush timber, such as sapling offcuts, from felled trees.

By the time the stakes have rotted you won't need to protect the trees any longer. Star stakes will probably last for 150 years or so!

Fencing

Often a cheap fence will be no cheaper than simple protection for individual plants. Possibly there might be more work in fencing an area, but this might depend on your willingness to dig post holes and to use a chainsaw.

However, even a makeshift fence will tend to be a more permanent arrangement than individual plant protection. How good a fence you need is often a relevant question. Sometimes it will be cheaper to fence against kangaroos and just use rubber rings or tyres against rabbits for plants inside the fenced area.

Can fencing be abandoned eventually? It may never be possible to totally abandon fencing, but it is certainly easy to over-fence or to fence 'not wisely but too well'.

For example, as trees mature, their bark hardens and becomes unpalatable to animals, thus low cost fencing which has a strictly limited life may be used. Homestead boundaries edged with fully grown trees will deter kangaroos and permit shrubs to grow without special protection. If necessary rubber rings can still be used to deter rabbits.

The expensive and time-consuming task of fencing is, for me, closely linked with the question of what kangaroos like to eat. It might be worthwhile to tempt the kangaroos in for experimental reasons.

Temporary means of protecting trees also has a part to play in establishing plantations. A burning question for me, because I am setting up a nut orchard, is *'Do kangaroos like to eat young pistachio nut trees?'* Their bark is resinous, so the answer is not obvious, and unnecessary fencing around a few hundred trees is a luxury I can't afford.

A possible solution is to plant out trees on the assumption that in the first few days only a limited number of trees will be damaged by kangaroos. However, I wouldn't recommend this if kangaroos are around in plague numbers!

If some of the trees are damaged, then the rest can be protected temporarily by wrapping newspaper around their trunks. This will serve as a protection until the area can be fenced in.

There are other methods of protecting plants, such as using the family dog, or growing a border of densely spined Opuntia cacti around areas to be protected against rabbits. I have heard of a forest-dwelling permaculturist who seals up rabbit burrows with wet clay obtained in a continuing programme of dam enlargement.

Finally, the epic battle against the roos and rabbits may be of relatively short duration. Mature trees and shrubs develop hard bark which is left alone. The tender branches of fruit trees can stand an erratic pruning by kangaroos and still provide plenty of fruit.

When this stage is reached the wild predators may even be seen as beneficial, living 'slashers' which keep down weeds and grass while organically fertilising the cleared spaces on the farm.

The 3Rs

The Professional Way

For details, send SAE to Aart Bark, PO Cattai, NSW 2756. Phone (045) 72 8568.

Aart Bark has devised a teaching method which uses *phonics*, one beat words, rhythms, word associations and memory training which helps children discover the mechanics of language for themselves. He has developed a two part phonic dictionary and a maths and tables system of which he says: "Tables are not learnt parrot-fashion. I teach 'recipes'. Children make and check their own sums."

Children can begin learning the 3Rs long before school and in a 'game' presentation. The approach is suitable for group or individual lessons, parents teaching children, taking them overseas, or helping slow learners.

"It took 10,000 hours to compile," says Aart.

"The ideas put forward grew out of the work done with private pupils ranging in age from 7-28, as well as with my own children (3-8)."

Spring in the vineyard

By Maggy Ragless

The days begin to grow longer, encouraging more sunshine and blue skies. Blackbirds sing spring songs in the chilly mornings and damp evenings. After the penetrating winter rains, the warmth of the sun seems to charge the whole world with life as we feel better and the plants look greener . . .

The new buds at the joints on the canes of the vines begin to swell as the sap rises from winter slumbering. They hold the secret of the season's growth and production and the final result of the harvest, subject, of course, to the weather.

A hard shell is shed from the bud to reveal a velvet soft, tan coloured case. After a few warm days the fluffy lime green leaves unfurl, to catch the bright sunlight, appearing almost transparent in the evening light, like little iridescent lights on the tips of the dark bark vine arms.

Nights are often still damp and dewy. Vignerons must be wary of lurking snails that creep up the arms to chew the delicate leaves. Snail killing can be done in a variety of ways. In our vineyard we mix a tablespoon of poison with a bait of bran and sawdust, laid at the base and several places on the arms of the vines.

Another, more primitive way, is simply to go around every couple of mornings for a few weeks and pick off the snails. I will leave it to your imagination to decide what to do with a kerosene tin bucket of snails!

Within a month or six weeks clusters of buds extend from the supple new canes. Tendrils reach out in every direction, their sensitive tips slightly curled, to twist tightly around any object which will support their rapid upright growth. In spring the vine makes the decision of how many bunches of grapes it will conceive. These are barely noticeable among the leaves as small bunches of pinhead-sized berries appear, to grow out green and horizontal.

Tiny scalloped bell-shaped caps pop off and the grape flowers unfold. A stigma in the middle, surrounded by well spaced anthers, catches the pale cream pollen powder blown or carried by insects from one flower to another. Perhaps there is a gentle perfume, or maybe it is the freshness of the morning dew on the leaves at this time of year? The flowering period is only short, as the warming sun dries the delicate 'petals' to brown colours of the earth to which they flutter back.

To walk through the vineyard in springtime is a pleasure — the long firm canes that have become tougher in the sunlight reach out to you and the leaves, now a darker shade of green, brush against your face as you pass by.

This is the second part in a series of articles on the seasons in the vineyard which Maggy Ragless hopes "might inspire owners of vineyards to appreciate their vines as connoiseurs do their wine." Winter in the vineyard appeared in Earth Garden 38 (page 40).

Doradilla vine in spring.

ICED HERB TEA

This is a refreshing summer drink. Make up your favourite herb tea (we use alfalfa) and let stand for 5 minutes. Pour this into a large jug and melt into it 2 large spoonfuls of honey.

Fill the jug ¾ full with ice cubes and, when cool, add 1 cup freshly squeezed orange juice and ½ cup lemon juice. A sprig of mint makes it a delicious thirst quencher.

Wendy Hamilton,
Toowoomba, Qld.

COOL LEMON GRASS TEA

Lemon grass makes a delicious cool drink as well as hot tea. Finely chop one long blade of lemon grass. Pour over it 1 cup of boiling water. Allow to cool. Refrigerate. Serve with a slice of lemon. It's very rich in vitamin A.

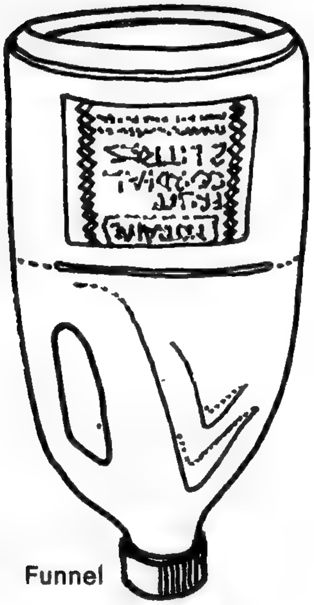
Joan Brown,
Ballina, NSW.

SUN TEA

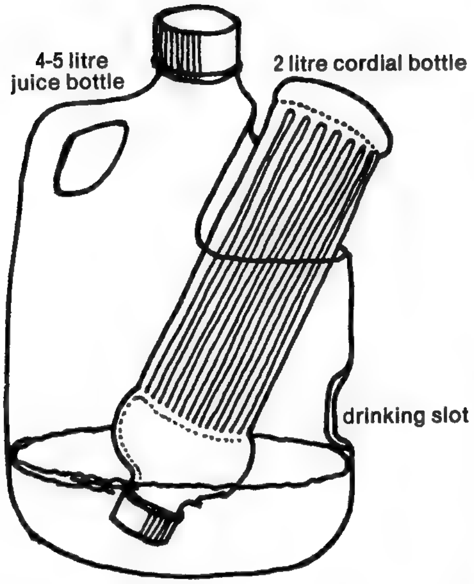
When we were in the United States a couple of years ago everybody was drinking sun tea, so one day I asked about it. You get a large glass coffee jar, say 500km size, add water, then add the tea (however strong you want it), shake it up, replace the top or cover with cheesecloth and leave it in the sun to steep for 6-8 hours.

It tasted very nice. Some places we visited had all these jars lined up outside in the sun. It looked very strange at first.

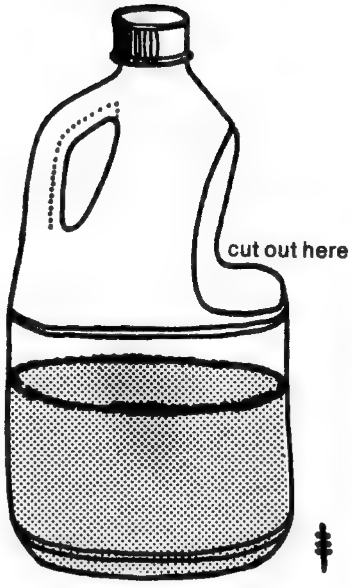
Cindy Chard,
Pimpama, Queensland.



Funnel



Waterer.



Grain scoop

Recycling containers

By Ross Riddett

Do you end up with heaps of empty, non-returnable plastic and glass bottles and feel guilty about not being able to put them to further use? Well, here are a few suggestions that may ease your conscience by putting these 'throwaways' to good use.

Plastic containers

Four and five-litre plastic containers, such as orange juice bottles have many uses, depending upon your imagination. These are examples of some I've tried.

(1) Funnels of various sizes may be made easily by cutting the bottom out of the plastic containers with a Stanley knife.

(2) An automatic watering device for chickens, etc, may be made by cutting a large section out of a 4-5-litre orange juice container near the top. It should be big enough to allow a 2-litre plastic cordial bottle to be inserted upside down into it.

A small hole is then poked in the neck of the 2-litre bottle about ¾ inch below the top (the tops are left on both bottles). A slot large enough for the chicken's head to enter is cut in the side of the large container, about 1-1½ inches above the bottom.

The 2-litre container is then filled with water and inserted in the 4-5-litre container allowing the water level to fill to just below the slot. This design has two advantages. First, the chickens cannot climb into the water and foul it and secondly, the handle on the large container allows it to be tied to the wire to prevent it from being knocked over by the chickens.

(3) The 2, 4 and 5-litre plastic containers can be used for storage of odds and ends, sorting bins, etc, by cutting out the tops, while still leaving the handles intact. They also make good feed bin scoops.

Glass containers

Most households seem to accumulate mountains of glass containers. I have found the following uses for a number of these items.

(1) Metal-topped, snaplocked type jars (for example pickle, onion and some jam jars) are ideal for holding nails, screws, bolts and so on in a visible display underneath shelves. This is achieved by nailing or screwing the tops to the underside of a shelf.

This way the jars fill waste space not normally used. They cannot be vibrated of knocked off a surface and they are more accessible than if loose on a shelf.

Coffee jars may be used in the same way but are not as good because the plastic tops are more easily broken and the full screw-top does not allow as ready an access to the contents.

(2) I have found that 150gm coffee jars make ideal honey jars, for selling or giving any excess honey as (a) they hold exactly 1kg and (b) unlike pickle jars, etc, they do not retain the odour of the previous food (coffee) after washing.

(3) Used wine flagons may be made into miniature cloches to protect young seedlings from frost and cold conditions. You will need to remove the glass from the bottom of the flagon. One simple way of doing this is to put 1-2 inches of ice water in a container, then heat the flagon by filling it with hot water (be careful it does not shatter by ensuring that the flagon is not very cold to start with). As soon as the flagon is hot, empty the water out and stand it in the ice water container. This will cause the glass to fracture fairly cleanly at the ice water mark.

A variation of this method is to soak a string in methylated spirits and wrap it around the flagon where you wish it to break. You then light the string and, as soon as it has stopped burning, immerse it in cold water. It should crack around the line, but may still need a gentle tap with a rubber mallet to separate the two parts.

Of course a glass cutter will give you a much more precise cut, especially if you wish to make drinking glasses or candle holders out of bottles. To take the sharp edge off the lip use a medium-to-fine sand or emery paper.

These are just a few ideas that I have tried with success. With a little bit of thought you should come up with lots of other ways of using all those jam tins, margarine and ice cream tubs, butter wrappers, cardboard boxes, newspapers and milk cartons.

more letters

Dear Keith and Irene,

It may sound corny, but I know that Earth Gardeners will understand, your magazine cheers us up in our worst moments, when almost everything has gone wrong, or is about to go wrong.

Kindest regards, Hugh & Wendy Stewart, Cherryville, South Australia.

Dear Irene, Keith & Earth Garden friends,

We are very new **Earth Garden** people and love it. We need lots of help and advice though. Are there any EG people out there who live close to us, or at least in the Tropics, who would be willing to write to us?

Our weather is so different to a lot of people, so we need help on what to grow and how. We have some vegies in, but our garden is not a great success. At this time of year we have lots of wind, which doesn't help.

If there is anyone who has a wood stove they don't need anymore, we would like one. Perhaps someone close to us could help, as freight is very expensive to here? As I am originally from Queensland, I would very much like to hear from anyone at all living the **Earth Garden** life, but people living in the Tropics would be of great help.

I would also like a good tomato sauce recipe, one for ginger beer and some soap recipes too. Does anyone have an oatmeal soap recipe? I will answer all letters and hope people will write. We feel alone up here at the moment.

Thank you, Kyra & Jeff Edwards, PO Box 1969, South Hedland, Western Australia 6722.

Dear Kyra & Jeff — There's one tomato sauce recipe in this issue and we had a good one for ginger beer (with plant) in Earth Garden 11 (page 23). We'd like a few soap recipes to publish also, but see *Good clean fun* (EG17, page 21) and *Simple soap* (EG37, page 44) for the basics. — *Irene & Keith.*

Dear Irene & Keith,

It's years since we last wrote, which was from Western Australia. We lived in England for 18 months until 1980 and have been in Tassie for three years. We bought a house in Boat Harbour, not far from Burnie and have about three acres. For the first year, owing to having a mortgage and intermittent jobs for Alan, plus being on the dole for a while, we were able to manage on very little and a lot of ingenuity.

We hope eventually to build a house, perhaps with a Cinva Ram, either in Tasmania or Western Australia. I still make bread and jam and we have vegetables delivered from a smallholding at Boat Harbour (while we rent the place to pay our mortgage and live in a company house). It's really cold and we get plenty of frosts and snow during quite a lengthy winter. However, we are in a valley and live a quiet, peaceful existence, with Alan working only five minutes away, not really a back-to-the-land story, but we will get there eventually.

Best wishes from Frances & Alan Dyer, Luina, Tasmania.

Dear Keith and Irene,

Since you published our letter on semi-dry areas around the Flinders Ranges our mail has grown abruptly. Anyone who is serious about the area would well be advised to take a holiday touring around. The local pub is always a great source of information. A few rounds of beer may save you $1000!

I also heard that there is to be another big auction at Leigh Creek. So **Earth Garden** people, transportable homes do go for a few hundred dollars, but you have to shift them. Also, I think most people around this area put a higher price on property than they expect to get, so try for less.

In our view the Flinders Ranges would be one of the most under-estimated beauty spots in Australia, but please also remember that in the summer you are in one of the driest areas in the world.

Glen & Ruth Cunningham, Willowie, South Australia.

Dear Irene & Keith,

Since reading your magazine I Have acquired a lot of valuable information. Thanks ever so much for publishing the article on grain grinders in **Earth Garden** 37. I have ordered and received the **Little Ark** mill. It's great.

Your friend, Peter Buhmann, Palm Beach, Queensland.

Dear Keith & Irene,

I am 28 years old and will eventually escape city life to live and pursue the ideals that guide me. In the meantime I am hoping to gain experience in owner home building, organic gardening and general back-to-the-earth farm management skills. To this end perhaps one or more readers could use my assistance, as an unskilled labourer, for at least one month, possibly longer, commencing in September. Anywhere in Australia would be okay as I have my long-service leave due and own a fairly reliable car.

I am prepared to work hard and can proceed without supervision if required. While I don't possess any known skills, I'll give anything a go. I'm a non-smoker, like a glass of wine occasionally and I am a meat eater, but will try vegetarian for the experience. I would like to assist anyone building in mudbrick. All I need is a place to sleep and food to eat, so if I can be of help to anyone, please write and we'll proceed from there.

Yours sincerely, John Longmore, 8/26 Gladstone Street, Bexley, NSW 2207.

Dear friends,

I have a 23,000 gallon cement tank that kookaburras suicide in by drowning. The plausible reason given by the National Parks people is that they are either after insects on the surface or they are fighting their own reflection.

I have trailed netting across the tank for them to climb on but this is ineffective; one drowned while the life preserver was in place. The ranger said kookaburras are hopeless walkers (and not good at bird paddle) and the only reasonable alternative is to cover the whole tank with mesh. As it is at least 40 feet across and cement, this would be a lot of work. I will do this if nobody can help with a more practical idea.

Dirk McGown, 'Summit', Warrumbungle, NSW 2828.

Dear Irene & Keith,

I read the article **A good workdog** in **Earth Garden 35** with interest and I wonder if anyone has ever tried using Corgis?

We had a Corgi years ago in New Zealand. We used to visit my father-in-law's dairy farm on odd weekends and the first time the dog went out on the farm was something of an eye opener for my husband and his Dad. We let him off the lead because he was whining and carrying on and watched as he went straight through the herd, and had them rounded up in no time. Next time we left the other dogs at home.

I was surprised. I knew Corgis had the 'cattle dog' instinct from generations ago but didn't really think our dog would be much good as he had been strictly a 'townie' for the whole of his 18 months (at that time) life, with nothing to round up but the child next door.

A few years back we had a Corgi/Chihuahua lady dog (speyed) and during a' two month stay at a cattle station out the back of beyond, she did a reasonable job of rounding up the goats a few times, so she also had the herding instinct. Perhaps someone might like to, or already has tried using Corgis for sheepdogs? It's an experiment I'd try to find more about if I was able to.

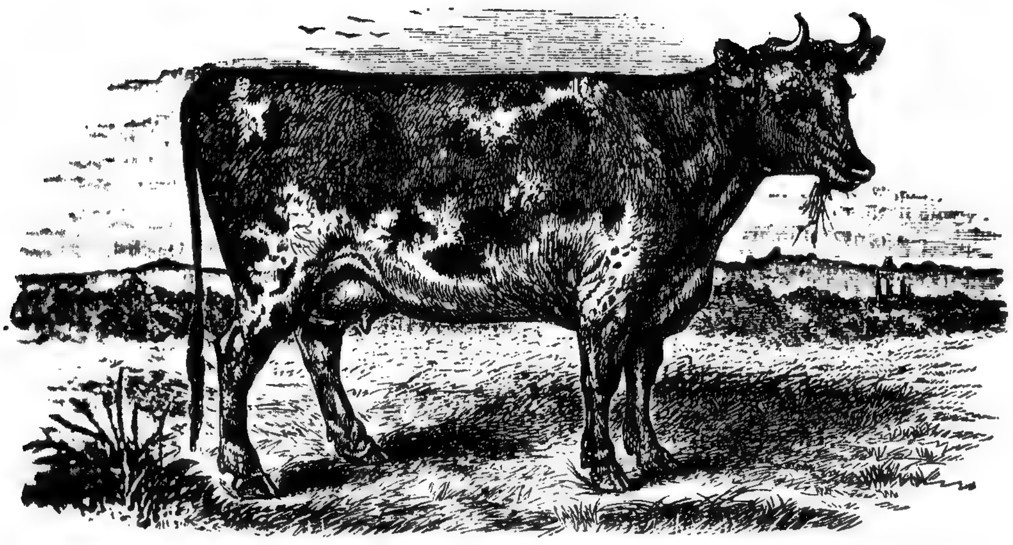
Sincerely, Sue, Casuarina, Northern Territory.

Dear E.G. readers,

I have just started reading **Earth Garden** this year after it was recommended to me by a friend when I was talking about trying to buy a small business on a few acres (between 10 and 100 acres). I would prefer a liveable shack or house, order would not matter.

I am also very interested in the growing of all herbs and spices as a small business concern and would sincerely appreciate all information or recommendations of any books I could read.

Joan Ellis, 30 Brooks Street, Newcastle, NSW 2300.



AYRSHIRE COW.

DAIRY NOTES, 1898

These old time dairying hints are reprinted from a marvellous old book with faded and torn covers loaned to us by mail by Ron Haines of Shiron Herbalists in Goodna, Queensland.

Its title is: **The Queensland Official Grocers' Price List and Year Book** for 1898-99, containing Information of Interest to the Squatter, Farmer, Selector, Miner and Housewife. Price — One Shilling.

It was printed in 1898 by The Outridge Printing Coy Ltd, 398 Queen Street, Brisbane and this particular copy has been overprinted with the name Griffin & Co, Drummond Street, Clermont. "I do believe," writes Ron, "that Clermont was totally destroyed by cyclone and flood around the 1899 mark."

The little book of 140 pages contains a wealth of information with notes on beekeeping, horses, pigs, fowls, housekeeping hints, fighting the white ant, workshop notes and a farming and gardening calendar.

To Keep a Small Dairy Cool — Close the gable ends of the building with battens nailed three inches apart. Nail canvas over the battens, and on a small platform above place a kerosene tin full of water. Over the edge of the tin hang a bunch of woollen rags, reaching to the bottom of the water, and falling over the canvas to a greater length than the ends lying in the water. The rags act as a syphon. The water is drawn up from the tin by what is known as capillary attraction, and constantly drips on the canvas, keeping it always moist. As a breeze flows through the wet canvas, the temperature inside the building is reduced by many degrees.

Good Butter — The essential things for making good butter are cleanliness, cool temperature and careful manufacture.

Butter — Cannot help being tainted if the dairy is a receptacle for every kind of produce, and the store for meat, onions and general lumber.

Milking — The cow should be milked at a regular hour each day, and always milked out, as the last of the milk is much richer in fat than the first. The cow should not be beaten or excited during the operation of bailing or milking. If the calf be allowed to run with the mother, she can no longer be considered suitable for dairying as the milking vessels become destroyed, owing to the calf being unable to consume all the milk the cow is capable of.

Improving the Milk Yield — Give your cows three times a day an ordinary pailful of water slightly warmed and salted, in which about one and a half quarts of bran has been stirred; your cow will give about twenty per cent more milk.

The Herd — The best breed of cows to have for a dairy herd is Shorthorn cows crossed with Jersey or Ayrshire bulls.

Lucerne — Will communicate its flavour to the cream and butter only if the cows are fed with it immediately before milking. Lucerne, green maize, imphee, sorghum, and Cape barley are the best fodder crops.

Calves for the Dairy or Butcher — The theory that the young calf reveals the future cow is based on the form and heredity of the calf's ancestors. If the calf has the beefy form, and her ancestors were noted for their beefy qualities, it is safe to say that such a calf will not make a profitable butter cow; but if the three day calf has the marked dairy form and is descended from a line of butter cows and sires, she can be developed into a good butter cow. The theory is based on the principle of breeding that like begets like.

Be Gentle with your cows. A gentle man gets more milk from a cow than a harsh man.

Separate the Weaker Animals — They need extra feed, whereas with the stronger they get scant feed.

A Simple Remedy for bad tempered cows that horn their mates is to screw a ¾ inch round or octagon nut on the tip of their horn. A new nut will cut its own thread onto the horn.

The Duration of Pregnancy in a cow is 285 days.

Salt — Place around your yards and fields in proper receptacles plenty of rock salt, covered from the rain.

Few farmers are aware that in addition to its being an essential for the building up of the animal, salt is useful in facilitating the passage of the albumenoids of the food from the digestive canal into the blood and the circulation generally; thus increasing the energy of the vital processes.

Put a thoroughbred bull at the head of your herd and breed up.

Don't be too officious when the cow is calving. Nature generally does her business in the proper way.

One of the important items in making the most out of feed is to feed and milk at regular intervals.

Cream should never be allowed to stand long enough to show a watery appearance between the cream and the milk.

Don't leave the cows with cracked or sore teats day after day, and then beat them because they kick when being milked.

Flavour depends very largely upon the sweetness and the flavour of the food given, and the surroundings of the milk and cream before it is turned into butter.

Don't attempt to be a dairyman if you feel like kicking a cow every time you see one. They feel it often before you kick and can never do their best.

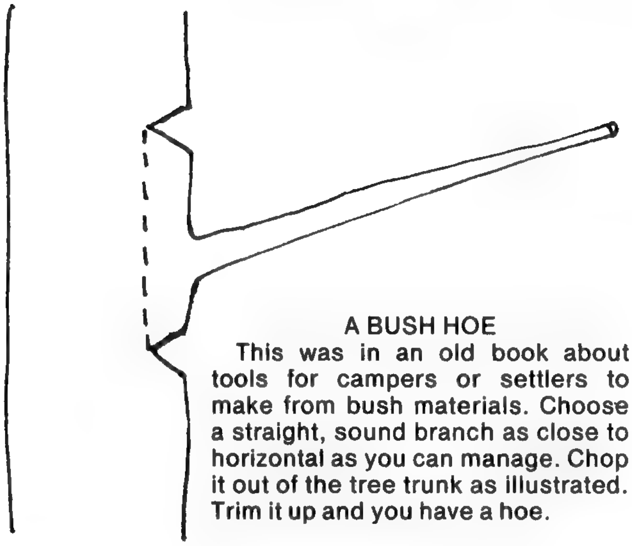
The treatment a cow gets the first forty-eight hours after calving will usually determine her productiveness for the year. Better starve than overfeed her at this time.

Don't be in a hurry to get the cows out of the paddock at night, nor go after them with a dog, unless it is a well-trained sheepdog that knows his business, knows the cows, and the cows know him.

One hundred pounds of good milk contain 87 pounds of water, 4 of fat, 5 of milk sugar, 3.3 of caseine, and 7 of mineral matter or salts.

"Testing Cows" means making their milk for one day, seven days, or thirty days into butter. "Testing milk" means a different thing entirely. It means to ascertain how much fat there is in a given amount of milk.

Tips from John



A BUSH HOE

This was in an old book about tools for campers or settlers to make from bush materials. Choose a straight, sound branch as close to horizontal as you can manage. Chop it out of the tree trunk as illustrated. Trim it up and you have a hoe.

POTATO CUTS

When I was a young boy we would bring a potato to school with us, cut a flat surface on it and carve out parts of the potato to make a raised design. This was dipped in paint and we had a stamp for making designs on paper. I think it could be used for cloth as well, probably with batik work.

Your only limitation is the size of the potato and possible reluctance to use good food to make a stamp!

NEWSPAPER BEADS

You can make beads from macaroni (but that's food too). You can also make beads from strips of newspaper. Cut the paper in a long triangle about an inch wide at one end, as long as the page is wide, terminating in a point. Roll the wide end around a knitting needle, put a bit of glue on the rest of it, then roll it up. Rub on damp clay when dry. Paint brightly when clay is dry. The reason for keeping the first few turns dry is to stop the bead from sticking to the needle when you thread it.

THRESHING PEAS

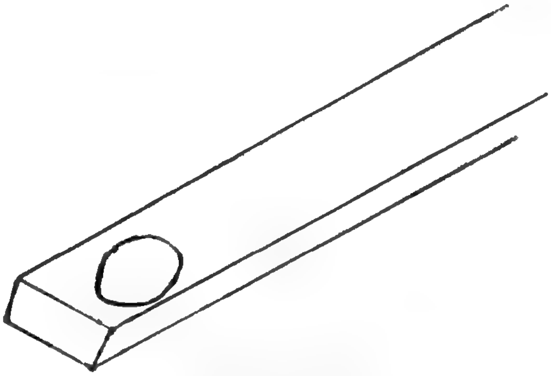
I once read in a book about the farming practices of the French who live in the Dordogne Valley of a farmer who left his peas in pod on the local bridge to be threshed by the passing traffic. It might result in a lot of broken peas, but it would save a lot of work!

CUTTING GLASS

An old method of cutting a glass bottle which people with access to old engine oil might like to try. Fill the bottle with oil up to the level where you want the break, then plunge a red hot iron into the oil. This causes the glass above the level of the oil to expand, so cracking the bottle along the surface of the oil (that's the theory!).

FISH HOOK

The key that opens some types of sardine tins will make a serviceable fish hook if heated and bent. A piece of the tin will make a spoon lure.



A PAINT STIRRER

Many people stir paint with any old stick that is handy, but you will find it well worthwhile to make a flat stick with a sharp edge and a hole placed near the end that goes into the paint as shown.

John Guest,
Rockhampton, Queensland.

Old-time hints

TO PREVENT BOOTS FROM CRACKING

To prevent new boots from cracking take some boiled linseed oil, and with a piece of flannel or rag wetted in it, rub over the soles and round the edges of the boots, turn the soles upwards until they are quite dry. This method not only keeps the boots from cracking but renders them more impervious to damp.

TO MAKE BOOTS PLIABLE

Kerosene will soften boots and shoes that have been hardened by water, and render them as pliable as new.

FOR HANGING BROOMS

A screw eye inserted in the top of a broom or mop handle is far more convenient and lasting than a cord.

STUFFING FOR PINCUSHIONS

Dried coffee grounds answer well for filling a pincushion. They do not attract moths like wool, nor mice as bran does, and if well dried they do not smell.

TO CLEAN FELT HATS

Dirty black felt hats should first be thoroughly brushed with a stiff brush to remove all the dust, and then wiped over with benzine; this will remove all the dirt and grease. The smell of benzine is much disliked by many people, so it is a good plan to leave the hats in the open air for some time afterward.

PAPERING WHITEWASHED WALLS

If you wish to have a wall papered which has been previously whitewashed, it must be well brushed over with vinegar, or the paper will not stick.

A STALE LOAF

If the loaf has become dry, but it is still wholesome, dip it into a bowl of water for three minutes; let it stand for half an hour for the moisture to penetrate, then bake it in a steady oven. This is best eaten hot.

CLEAN SPONGES

To keep your sponge in good condition, you should occasionally wash it in warm water with a little tartaric acid or soda, afterwards rinsing it in clean warm water.

TO REMOVE OLD PAINT

For removing old paint and varnish from woodwork, apply an emulsion formed of two parts of ammonia, shaken up with one part of turpentine. This so softens the paint that after a few moments it can be scraped or rubbed off.

Extracts from **The Queensland Official Grocers' Price List and Year Book**, 1898, courtesy of Ron Haines of **Shiron Herbalists**, Goodna, Queensland.

MARINER'S SOAP

This is made by substituting coconut oil for fats or oils used in making common soap. It has the advantage of forming a lather in salt water.

OATMEAL SOAP

Make a saturated solution of borax, cut into it any bits and pieces of soap. Add a little glycerine. Let the mixture boil until the soap is dissolved. Make it as thick as cream by boiling or by adding more if too thick; then stir into the mass oatmeal enough to make a soft paste. Stir until it cools and hardens.

Place in a greased wooden box before it hardens, then turn out and cut into squares. If a sand soap is required, add a little refined sand while boiling. This will clean the dirtiest hands.

BATH SALTS

Crush 1lb washing soda (sodium carbonate) small. Dry well in oven about three hours. Put in a glass jar and add thin slices lemon rind. Keep well corked with the soda crystals for a week. Smells like verbena.

FROZEN PERFUME

Take 2oz oil of lemon grass, ½oz oil of cloves and ¼oz oil of lavender flowers. Mix them well together. For this amount of perfume you require about four quarts of melted parrafin. Pour the oils into the melted parrafin while warm, stirring it while pouring.

This perfume is in a solid transparent form, and by rubbing on the handkerchief it imparts an exquisite perfume. By carrying it in the pocket it perfumes the entire wearing apparel. By keeping it in a drawer or box all articles therein obtain the benefits of this perfume.

A SAFE BEDWARMER FOR CHILDREN

Take a piece of strong material about half a yard square, double it and stitch firmly around. Put into it about 4lb of silver sand (fine sand) and then sew it up firmly to keep the sand from running out. If put in the oven for about one hour it gets nicely hot, and will keep so for several hours.

TO MAKE FLANNELETTE NON-INFLAMMABLE

After washing and rinsing the garments, dip them into water in which an ounce of alum has been dissolved.

INK

Beautiful blue writing fluid: Dissolve basic or soluble Prussian blue in rainwater. This is the most permanent and beautiful blue ink.

Black ink: Shellac 4oz, borax 2oz, water one quart (one litre). Boil until dissolved, add 2oz gum arabic dissolved in a little hot water. Boil. Add enough of a well *triturated* (rubbed to fine powder) mixture of equal parts of indigo and lamp-black to produce the proper colour. After standing seven hours, draw off and bottle.

Extracts sent to us by Paul Davis, of Punchbowl, NSW, taken from the collection of old books left by his Great Grandfather.

SUBSTITUTE FOR WAX ON CORKS

Instead of bottle wax, which crumbles on the insertion of the corkscrew, and the particles of which may fall into the liquor, cover the cork with a solution of gelatine, dissolved in glycerine by the application of heat.

TO CLEAN LACQUERED ARTICLES

Brush with hot water and soap, wipe and dry before the fire; finish with a soft cloth. Avoid the use of washing soda, which may remove the lacquer.

TO PRESERVE HARNESS

Harness requires the application of neatsfoot oil every year, and it should be washed every three or four weeks in strong suds of Castile soap, and kept in a dry place. It will thus be prevented from becoming hard, dry or rotten.

WASHING LINEN

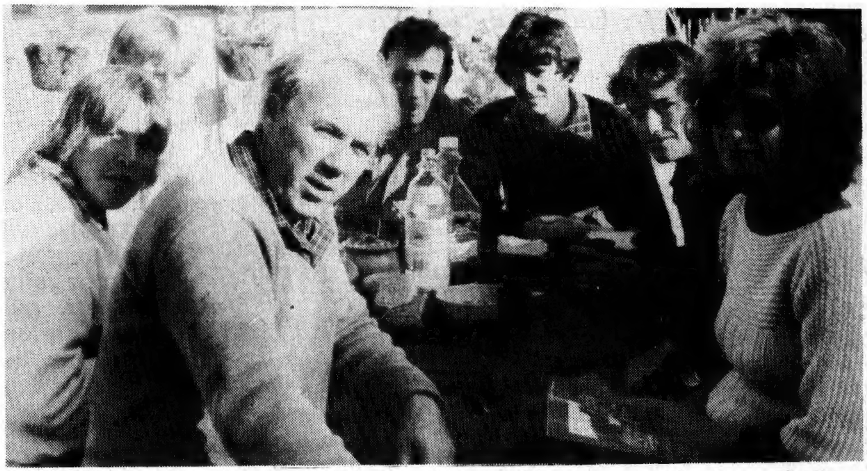
The Dutch and Belgian washerwomen, who get up linen beautifully, do not use soda, but borax, in the proportion of a handful of refined borax to about 10 gallons of boiling water. They save nearly half the quantity of soap, and the borax does not injure in the least even fine lace or cambric.

These hints are from our own copy of *The Best of Everything,* published in London by Frederick Warne & Co, 1874.

LIFE SKILLS

We were visited recently by five young students from an Introduction to Trades course at the nearby Technical and Further Education (TAFE) college at Meadowbank, NSW. The 15 week course is a Commonwealth sponsored scheme, open to 15-19 year olds who have been unemployed for at least four months, and gives them a taste of various trades.

It also allows them to experience some communications and life skills, which is where we fitted in by showing the boys some bread baking (they all had a go at kneading) and how to make yoghurt, soft white cheese and bean sprouts.



Eating the lesson! At front transition co-ordinator, Colin Dunn, and from left Carl, Peter, Vince, Garry, Graham and communication and life skills tutor, Carol Powell.

The students, who receive unemployment benefits, also get a travel allowance of $6.00 a week, while the college provides all they need, including books, pencils, overalls and boots. It seems to work — Colin Dunn tells us that most of the 15 students who did the course (including two girls) have now found apprenticeships or other jobs.

TAFE colleges throughout Australia are expanding their courses to provide day and evening classes in a wide range of skills apart from the technical trades. Subjects taught include nutrition, ethnic cuisine (Chinese, for example), bachelor cooking, freezer-to-table meat dishes, bread baking and even organic gardening and mudbrick building. Contact your nearest TAFE college for more information.

Earth Garden 40

EG40, out in November, will be the last issue for 1983.

So far we have stories on food co-ops, the Self-Build scheme and other mudbrick building stories, tree planting and trees for bushfire protection, planning a farm (part 2) and livestock, plus people, places, access, letters and land lines. Due to travel plans, we have an early deadline, so please send all material, especially land lines, to us by October 1.

Peace and love,
Irene and Keith.

EARTH GARDEN, PO Box 378, Epping, NSW, Australia, 2121

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EG1: Move out ... food co-op ... earthworms ... Kibbutz & Moshav ... herbs ... access key ... Fred Robinson ... bean sprouts ... Montsalvat ... organic growing ... comfrey.

EG2: Organic farm ... start a garden ... Neil Douglas the garden artist ... Kiewa farms ... keyline system ... drying and storing food ... hydroponics ... compost garbage ... nutrition.

EG3: Herbs ... making compost ... fast fertilizer ... all about goats ... companion plants ... mudbricks with Neil & Abbie ... water wheel ... domes ... salads ... bread ... pottery ... spinning ... vegies.

EG4: A pleasant treatise on the honey bee ... working bees ... sources ... back to the land in Tasmania ... the transition ... black sheep cycle ... tanning ... candles ... bread ... domes ... donkeys ... wall hanging.

EG5: The wind — windmills ... windpumps ... generators ... raku pottery ... Cinva ram ... keeping poultry ... Hamburghs ... moon planting ... vegan way ... fallout shelter ... just 9 acres ... garden tools.

EG6: Solar 1 — sun cults ... solar cooker ... sundials ... the lost world ... Clifton Pugh ... concrete house ... Shalom ... Cajun cookin ... animal care ... horses ... spirit of Nimbin.

EG7: Solar 2 — hot water ... solar ideas and sources ... good company ... Angora goats ... make a leather bag and belt ... survival skills ... mushrooms ... natural dyes ... mudbricks again ... flight from the city.

EG8: Gas power — methane digester ... power from the pig pen ... by truck to Tassie ... just ¼ acre ... cumbungi hats ... Harmony Farm ... inkle loom ... tapers ... country cottages ... a frame ... school gardens ... sourdough.

EG9: Alternatives to petrol — LP gas ... Mary's place ... building with stone rubble ... oats ... ducks ... macrobiotics ... horse and cats ... rug frame ... natural farming ... how to kill a pig.

EG10: Granite house ... bamboo flutes ... geese ... chip heater ... make beehives ... mudbricks yet again ... Jarrah shingles ... methane ... Bio-dynamics ... tandem seaweed ... index (EG 1-9).

EG11: Water — hydraulic ram ... water wheels ... miller's tale ... okra ... seed primer ... heavy horses in Quebec ... tomatoes ... soft technology ... start with hens ... wine ... hard cheese.

EG12: Keeping food ... drying ... salting ... bottling ... storing ... meditating ... tahu ... tobacco ... tropic delights ... plant propagation ... plans for a solar water heater (part 1) ... solar stills ... solar cooker ... Moora Moora.

EG13: The bush — men with axes ... woodchips ... native garden ... flora & fauna ... national parks ... wild places ... wildlife ... bushcraft ... solar hot water plans (part 2) ... straw & paper garden ... producer gas ... Jerusalem artichokes.

EG14: Self-sufficiency — gardens for all ... Botobolar vineyard ... Abbie's goats ... Terania Creek ... millet ... Crusoe ... Thoreau at Walden ... Helen & Scott Nearing ... healthy soil ... we built in stone.

EG15: A Lytel Herbal — growing and using herbs with text and illustrations from the classic 16th century herbals with modern commentary ... companion herbs ... herb sources & books ... index to EG15.

EG16: A Lytel Herbal (Part II) — comfrey lavender ... wormwood, yarrow ... people & the land ... poultry shed ... Moora Moora ... peafowl ... goat notes ... basic beekeeping ... building in pise (rammed earth) ... miracle pump.

EG17: All about fencing ... dry stone walls ... make nets ... your own soap ... Autonomous house ... pole shelter ... breeding black sheep ... owner-builders ... asparagus ... Aeolian harp ... Khaki Campbells ... D for duck.

EG18: Fruit garden — oranges ... lemons ... olives ... nuts ... tropical fruit ... fodder trees ... built a road ... homebirth ... wood-fired pottery kiln ... Cinva-ram cottage ... earthworms ... hulling sunflower seeds.

EG19: Wood heat — pot bellies ... Jotul ... cooking ... making a quid ... build a storage cellar ... bushfires ... Sunrise Farm ... stonefruit ... macadamias ... budding ... binding your EG collection ... tree planting.

EG20: Apples ... pears ... cordon & espalier ... avocado ... the Zolins ... pollen ... build a haybale pig house ... love your cow ... rose hips ... the mudbrick flats ... solar homes ... gourds ... preserve fence posts.

EG21: Womancraft — all articles by women ... settling down ... earthly arts (interview with Abbie Heathcote) ... axewomanship ... glove puppets ... joy of spinning ... time to weave ... easy rugs ... lambing ... Sumatran house ... mudbrick weekends ... the group ... old roses ... index (EG10-20).

EG22-23: Australian Access 150 page sourcebook — Aborigines ... organic food growing ... permaculture ... Bill Mollison ... earth building ... wind ... solar ... water power ... solar cells ... water supply ... bucket pump ... with access to groups, books, tools and techniques ... small scale technology.

EG24: Place — 24 groups and new settlers share their place outside the cities ... including Mare Carter ... Ron Edwards ... Neil Douglas ... Gundaroo Store ... Rainbow Region ... Universal Brotherhood ... Mt Oak ... Moora Moora ... bush ashram ... desert oasis, cold winters ... personal stories from 20th century pioneers.

EG25: Australian Access 2 — 130 page sourcebook — livestock ... acquaculture ... fencing ... wombat gates ... killing ... tanning ... food and nutrition ... Dorothy Hall ... a year's supply of food ... grain grinders ... mincers ... methane basics ... wind generator ... low energy solar homes ... greenhouse ... more tools & techniques.

EG26: Colour spread on the earth-built kasbahs of Morocco ... owner-builders report on homes of stone, timber and mudbricks ... build a slab cottage ... tree felling ... two solar-electric homes ... Earth Garden survey ... survival vineyard ... acorns ... fruit without poisons ... compost dunny ... home-made gas ... quandong ... pumpkin recipes.

EG27: Plants we eat — 100 tropical food plants for Australia (part 1) ... plant protein ... 16 legumes to grow & eat ... like winged bean ... pigeon pea ... lablab bean ... cowpea ... sword bean ... chickpea ... sugar pea ... mung bean ... soybean ... adzuki bean ... life-raft ... blacksmithing ... bluestone building ... mudbrick solar home ... wok cookery ... choko ... homebirth.

EG28: Animal stories — by packhorse through the Victorian Alps ... horse & buggy ... Mary's black sheep ... the woolly Merino ... Timbertown bullocky ... tropical food plants for Australia (part 2) ... stringybark baskets ... tamarillo ... buying bees ... solar trike & fan ... make a poker ... persimmon ... seed patents.

EG29: Mudbrick building primer — the monastery at Stroud ... six builders & their mudbrick experiences ... mud barbecue ... Bob's bonza brickmaker ... earth floors ... curved walls ... herbs on the roof (sod it!) ... low energy design ... the cutting axe ... food plants for tropical Australia (part 3) ... coconut mats ... mango mania.

EG30: Organic growing guide ... the organic idea ... food without poisons ... making compost in heaps, pits, trenches, boxes, bins & barrels ... carpet the garden ... wot no digging? (mulch it instead!) ... organic methods for the semi-arid West ... compact growing boxes ... a traditional farmer ... preserving figs ... tasty tempeh ... the Bornhoffen story ... pasta ... glass bottle mosaics ... two trickle watering systems ... cool kitchens ... macrobiotic bakery.

EG31: Energy alternatives at work — make your own hydraulic ram ... second-hand windpump ... yacht wind-generator ... mudbrick sequels ... freezing food ... blanching ... choosing a freezer ... zucchini glut ... drying fruit ... all about sprouts ... fireless cookers (hot boxes and baskets) ... camp oven ... growing greens in the wet ... building a log house (part 1) ... index (EG 21-EG30).

EG32: Trees — tribute to trees ... St Barbe Baker tree tales ... how a tree works ... the miracle of a leaf ... native trees from seed ... trees on the farm (interview with Tim Cox) ... forestry directory ... dieback ... renewing the land ... coppicing ... the woodchipper blade ... value of trees ... artist in the bush (interview with Neil Douglas) ... low cost country home building ... earth building books ... cob does the job ... building a log house (part 2) ... square foot gardening.

EG33: Tenth anniversary issue ... uses of wood ... timber felling ... lifting poles ... post-and-beam design ... building a log house (part 3, concludes) ... parquet floors ... backyarders' livestock ... goats ... rabbits ... fowls ... portable hen-house ... dandelions ... wild tea party ... bush regeneration ... planning figs ... dry pit loo ... blackberry-eating beetle ... weeding tools ... catchment philosophy ... seed supplies.

EG34: A look at China (extra colour photos) — the commune system ... teaching the masses ... trees of friendship ... forestry ... fish farming ... recycling human wastes ... biogas ... transport ... travel notes ... Ron Edwards writes on earth building the Chinese way (and tea) ... making the farm pay ... places ... bread & jam ... what to do in the Year of the Tree ... rainforest ... eco-gardening.

EG35: Bees and trees — Tributes to Richard St Barbe Baker ... tree tales ... backyard bees ... hiving a swarm ... St Barbe's bees ... a beginner's kit ... beekeeping books, equipment, clubs and information ... nectar-yielding eucalypts ... self build housing ... mudbrick workshop ... earth wall footings ... make your own solar collector ... a good workdog ... magpies ... wormiculture ... nuclear nightmare ... waste to compost ... dig for victory ... fodder trees.

EG36: Settling in at Nimbin — glimpses of Nimbin ... settler's tales ... interview with a woman builder ... handbuilt homes ... a pawpaw plantation ... birth & beyond ... plug in the sun — simple, cheap, solar electric systems ... passive solar 'rules of thumb' ... biological building ... farm structures ... a potty garden ... choughs ... bush birds ... the inn at Ollantaytamboo, Peru ... more fodder trees ... regreening at Young ... make a lavender sachet ... the food page ... nuclear-free Australia? ... More!

EG37: Hard times — sidestepping the recession ... new paper from old ... newspaper fuel ... rags to rugs ... barter ... when the lights go out ... slush lamps ... sawdust stove ... tin can cooker ... the hungry 30s ... Depression dodges ... Happy Valley humpies ... hand grain mills ... 120 money saving hints ... make soap ... whitewash ... polishes ... cleansers ... glue ... insect repellents ... table of raw materials ... passive solar design ... roof ponds ... solar cell update ... donkeys at work ... lots more!

EG38: Access survey — where to buy alternative energy equipment ... electric grain grinders ... Hard Times tucker ... back to basic bread ... batch baking ... steam cooking ... sustaining soups ... no-meat meals ... solar dried bananas ... yoghurt ... summer cheese ... cheap meat meals ... home brewed beer ... coffee from tree to cup ... a Gujarati village ... Noel's Island ... Wild Country Park ... Depression days ... small farm equipment ... earth walls and bushfires ... mudbrick hermitage ... owner-builder problems ... the electromagnetic house (building biology) ... Self-Build success ... Hondas on the farm ... sweet cherries ... winter in the vineyard ... more!

These books may change your life!

The Settler's Guide

Old-time skills and bush lore

Compiled by Keith Smith

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The Essential Earth Garden

A handbook of self-sufficiency in Australia

Edited by Keith & Irene Smith

Nelson, Melbourne, 1982, large format paperback, 509 pages, profusely illustrated, index and access directory. Price $15.95 posted.

Like magpies, we've picked out the shiniest, essential stories from the first 10 years of *Earth Garden* magazine to compile this big book, a survival kit and resource guide for the difficult times which lie ahead in this last part of the 20th century.

It's about supporting yourself — growing your own food and preserving it, recipes, building your own house from earth, stone or timber, and keeping small livestock. There are plans for building a solar water heater, a hydraulic ram pump, a pottery kiln, poultry shed and concrete water tank. Learn how to make soap, bake bread and weave an Aboriginal dilly bag. The *Access Directory* lists the sources of books, plans, tools, catalogues, groups and hardware to follow up every subject. It's essential!